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THE EMPLOYER AND EMPLOYE.

THE spirit of unrest, which manifests itself at certain unexpected periods in the labor world, has often been the subject of much highbrow discussion.

Social reformers, efficiency experts, industrial economists and the like have all contributed their quota of learned hints which have been published and duly commented upon by both employer and employe.

Master plumbers, master steamfitters and manufacturers have been confronted with this subject not only from the merely theoretical standpoint, but from the severely practical one.

Doubtless there have often been points of merit in the contentions of both sides in labor controversies. There is frequently soiled linen to be washed in both the contending and opposing camps. To the disinterested critic who sits in calm judgment, right is right and wrong is wrong, in spite of any and all contentions to the contrary.

Human selfishness—that trait which man inherited from his prehistoric ancestors who would think nothing of killing the individual in the next cave over a goat dinner—still clings to the race. Whether it will ever become an extinct trait as the world continues to progress, is a question for wiseacres and philosophers.

Instead of harmony and evolution in the social, political and industrial scheme of things, we find discord and revolution. Nations fly at one another's throats, neutral government is rent by internal political conflict, labor and capital frown menacingly upon each other.

Reason and justice seem to have been abandoned in the mad desire to accomplish selfish ends. The desire to achieve personal gain at the expense of the other fellow appears to be the dominant ambition of an increasing number of men, be they prince or pauper, rich or poor.

Co-operation and loyalty are significant words which make for constructive progress when properly applied.

The absence of these progressive factors spell stagnation and disintegration. In organizations where contending factions exists, high geared efficiency is impossible. With the employe pulling one way and the employer another, conditions are certain to become intolerable sooner or later.

Both the employer and the employe are stockholders in the organization from which they gain their livelihood. This realization should tend toward the development of co-operation and loyalty. The employe's stock is represented by his job, and the dividends by his wages. Unless he looks at the matter in this broad light, he is apt to be killing the goose that lays the golden egg.

There is no sane argument against the fact that the efficient man is fully entitled to just and equitable compensation. But when the employe feels that his wages can easily be increased by the mere addition of a few dollars to the contract, there is unquestionably reasonable grounds for criticism. Such theories put to practice would be erroneous and even ruinous. The employe in his shortsightedness omits to take into consideration at least that element of the public who are home builders or contemplating it. The employe should bear in mind that the cost of building is rapidly increasing, and to a certain extent this high cost of building has been brought about by the demands of labor. If wages continue to increase so rapidly, capital is likely to be driven into other channels of investment, to the financial detriment of both

the builidng contractor and his employes. American labor, skilled or otherwise, is the highest priced labor in the world. Wages have gone soaring within the past twenty-five years, and many persons hesitate to build because of the high cost of manual work.

And so when demands are made for still higher wages, it is natural to expect that contractors will file objections, not because they are necessarily opposed from selfish motives to grant an increase, but because it would hurt building operations, inasmuch as less money would go into building construction owing to the excessive cost of the labor connected with it.

NEW RULES FOR PLUMBING IN BAR-ROOMS IN WASHINGTON, D. C.

A. R. McGonegal, Inspector of Plumbing in the District of Columbia, has recently issued new regulations relative to bar-room toilets in Washington, D. C. The new rules, which were approved by the Excise Board, follow herewith in full:

It being believed necessary to obtain an especially high degree of sanitation in toilets connected with bar-rooms, both as to the fixtures used and the general finish of the room, the following schedule of equipmet is recommended and will be required in all cases where new plumbing is installed in such places.

Plans will be approved and final inspection made only by the undersigned or in his absence by the acting chief of this office.

In case any variation from the schedule is desired such variation will be submitted to this office by plan, accompanied by a written explanation of the reasons therefor, which will be taken up by this office with the Excise Board.

Rooms.

Size.—Ample size for location of fixtures and with sufficient space to allow free passage when fixtures are in use.

Constructions.—Rooms to have all outside walls of brick, and inside walls of brick, plastered stud or of plastered expanded metal lath.

Location.—To be immediately contiguous to bar-room; door to open directly thereinto.

Heat.—To be properly heated.

Light and Ventilation.—By window into space open from ground to sky or by a skylight, neither being less than two feet in the clear in any dimension, and containing not less than four square feet in the clear.

Larger windows or skylights than these are preferred, and it is recommended that as much natural light and ventilation be provided as is reasonably possible.

Provide artificial light.

Wood.—No exposed woodwork other than doors and windows, with their frames and trim.

Cove.—A cove or rounded corner between floor and walls is recommended.

Walls.—White tile completely around room, except back of stall urinals, to height of at least four feet, and either hard finished plaster or metal ceiling plates above, either to be painted white or light color in gloss finish.

Ceiling.—Same as upper part of walls.

Floor.—Encaustic tile or terrazo.

Partitions.—Water closet partitions to be marble strongly supported and should be raised above the floor.

Fixtures.

Wash Basin.—Located in bar-room, where it can be watched by bartender.

Urinals.—One or more, as may be determined to be necessary, not less than 24 inches wide. White glazed, porcelain, stall type set with drip receptor below the floor surface so that floor will drain into same. Three-inch trap and waste. Push button flush valve or automatic tank.

Water Closets.—One or more porcelain bowls, seat action, wood or vitreous tank; crescent-shaped white pyralin covered or baked enamel wood seat. If only one closet it may be locked, provided key with large tag is kept in plain sight and sign on closet enclosure door directs customer to ask the bartender for same. Water closet enclosures without door are recommended.

(Signed) A. R. McGonegal,
Inspector of Plumbing, D. C.

WHAT THE LAW DECIDES.

Liability of Landlords for Injury From Radiators.

Where the plaintiff rented apartments under an agreement that steam heat would be supplied by the landlord, and during the possession of the leased premises by the tenant the steam escaped through a disjointed radiator, injuring the tenant's furniture, and causing her to take up her abode elsewhere, the Supreme Court of New Jersey holds, in Le Pichard vs. George N. Thurber Co., 86 Atlantic Reporter, 953, that the landlord was liable for the damage thus caused.

To much the same effect is the decision of the Supreme Court of New York, Appellate Term, First Department, in the case of Isaacs vs. New Haven & New York Realty Corporation, 141 New York Supplement, 338, where it reverses a judgment rendered for the defendant. The court says that the plaintiff was a tenant of the defendant, occupying a steam-heated apartment. On November 13th the superintendent was called in to fix a radiator that had been pulled away from the wall. As he was unable to get it back, he broke the pipe connecting the radiator, between the valve and the radiator, and turned the radiator around, and left the radiator in this condition for eight days, warning the plaintiff not to turn the valve. The plaintiff was awakened on the morning of November 21st by the sound of escaping steam, and called the superintendent, who went into the room and turned off the valve. The escaping steam damaged the piano and furniture in the room. The action was brought to recover the fair and reasonable expense of the repairs made necessary by the damage from the steam.

The plaintiff testified that she had not opened the valve. The defendant's counsel developed the fact that she had company on the night of November 20th, and argued that the valve was probably turned on by them. If the valve was turned on by the plaintiff, she would have been chargeable with contributory negligence. The steam-heating apparatus was in the control of the landlord; its employee created a condition, and left the steam pipe in that condition an unreasonable time. This was negligence. If that condition had not existed, the turning of the valve would not have caused the injury. Therefore there were two causes concurring, either one of which alone would not have caused the damage to plaintiff's furniture. The two defects together were the proximate cause thereof. If the turning on of the valve was the negligent act of a third party contributing to the injury, the defendant was nevertheless liable.

Swimming Pools

Their Construction, Mechanical Installation, Water Supply, Heating the Water, Various Types of Installations Adapted to Different Conditions

By A. G. KING

(Concluded)

Heating by Special Heaters.

Figure 33 illustrates a special form of heater devised some years ago for heating water for baths, pools, etc., and used with success. It is composed of two horizontal cylinders from six to eight feet long, according to the size required. The upper cylinder contains a perforated copper tube, through which all the hot water passes. The hot water expands this copper tube, which actuates a lever at the end of the heater and closes the valve when the water has reached the desired temperature. When the water cools the copper tube contracts, opening the valve for a new steam supply. The lower cylinder contains tubes which receive the steam and transmit its heat to the water flowing through the shell. It is made with capacities to raise from 1,000 to 10,000 gallons of water per hour from 50 degrees to 150 degrees. This type of heater works with high pressure, low pressure or exhaust steam.

Heating by Injected Steam.

Two methods are employed. The steam is either injected into the water before it reaches the pool, or it is injected directly into the pool. There is no difference in the number of heat units required and consequent consumption of coal; the injection of the steam into the water before it reaches the pool is by far the better method of installation, for two reasons, if for no others: Injection of steam directly into the pool requires an obtruding object which should not be permitted; the introduction of steam at a high pressure directly into the pool causes noise and turbulence.

The injection of steam into the water as shown in Figures 18 and 19 requires a determination of the heat units required, the consumption of steam taken from a plant possibly already overloaded, and the size of the steam

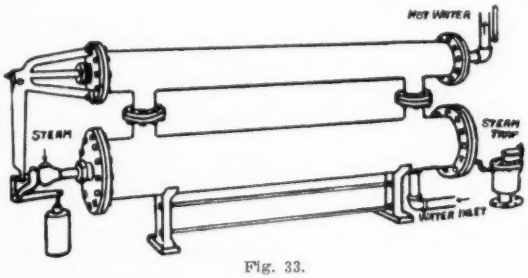


Fig. 33.

feed pipe. In the problem under discussion we have already found 6,230,840 B. t. u. are required to heat the water of the pool. A pound of steam at 60 pounds pressure contains 1,175.6 heat units.

6,230,840 divided by 1,175.6 = 5,300 pounds of steam required to be condensed to raise the temperature of the water 20 degrees in one hour. If there are ten hours available to heat the water, 530 pounds of steam will be condensed per hour.*

*The number of heat units in one pound of steam at other pressures is shown on page 39 of Prof. John R. Allen's "Notes on Heating and Ventilation."

The consumption of anthracite coal is arrived at by knowing that from the consumption of each pound of coal 8,333 B. t. u. are secured.

6,230,840 B. t. u. divided by 8,333 = 747 plus —pounds of coal.

One pound of steam at 60 pounds pressure has a volume of 5.77 cubic feet; 530 pounds of steam would have a volume of 3,058.10 cubic feet, which would be the volume of steam to be conveyed per hour. Even in very

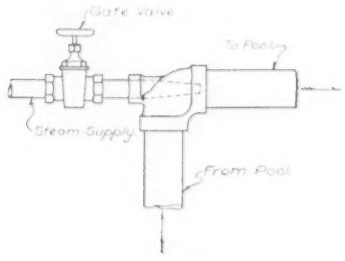


Fig. 18.

large pipes the velocity of steam should not exceed 100 feet per second. The volume of steam, 3,058.10 cubic feet, to be transmitted in one hour, requires .849 cubic feet per second; a 2 inch pipe has an area of 3.14 square inches; 3.14 divided by 114 square inches = .0218 square foot; .849 divided by .0218 = 38.9 feet per second. While, theoretically, the size of the pipe may be reduced below two inches and the velocity increased, yet, practically, it is better to use a two inch feed pipe and throttle it down to the desired degree; this for two reasons: first, it may be assumed that under certain circumstances it may be desired to heat the water in the pool in less than ten hours; second, it is desirable to have a pipe of a tangible size to prevent breakages and disarrangements which might happen if a pipe of the exact theoretical size were to be used.

If the pool is to be heated by injection of steam directly into the pool, and the device shown in Figure 21 is used, the following table may be used to determine the size required:

Capacity in Heat Units Per Minute.

Diam. of Stm. Pipe	Steam Pressure. 10 lbs.	20 lbs.	40 lbs.	60 lbs.	80 lbs.
¼-Inch ...	810	1,040	1,820	2,485	2,920
½-Inch ...	2,540	3,270	5,720	7,620	9,150
¾-Inch ...	4,375	5,625	9,845	13,125	15,750
1 -Inch ...	7,000	9,000	15,750	21,000	25,200
1¼-Inch ...	11,500	15,000	27,000	35,000	42,000
1½-Inch ...	17,500	22,500	39,300	52,500	73,000
2 -Inch ...	26,700	34,300	60,100	80,000	96,000
2½-Inch ...	39,000	50,500	88,500	108,000	141,500
3 -Inch ...	61,200	78,750	137,500	183,700	215,500
4 -Inch ...	103,250	132,750	231,200	309,759	371,700
6 -Inch ...	245,000	315,000	550,000	735,000	862,000

As there are 6,230,840 B. t. u. required in ten hours or 600 minutes, there will be 13,848 required per minute. The table shows that, at 60 pounds pressure, a steam pipe

¾ inch in diameter would be required. Here, as in the previous case, and for the same reasons, good practice would recommend a larger pipe.

In discussing the construction, heating and administration of swimming pools, Jos. E. Raycroft, M. D., of Princeton University, says that there have been more sins

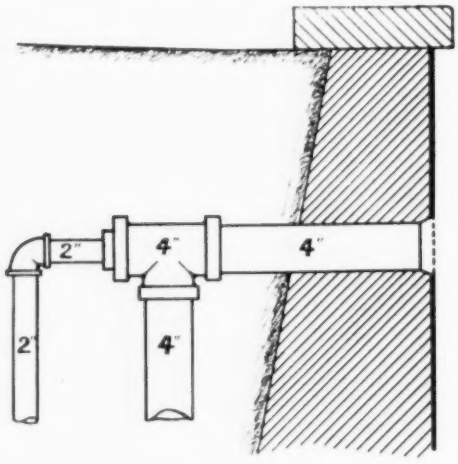


Fig. 19.

of omission than commission in the construction of swimming pools than in any other item of equipment for playground or gymnasium, and states that some of the common mistakes which have been repeated singly or in groups in many pools in the country are as follows:

First: The selection of a bad location—not infrequently in a basement in which the ventilation is inadequate and which is inaccessible to sunlight or even daylight.

Second: Bad type of construction so that it is difficult or impossible to keep the pool and its surroundings in a sanitary condition.

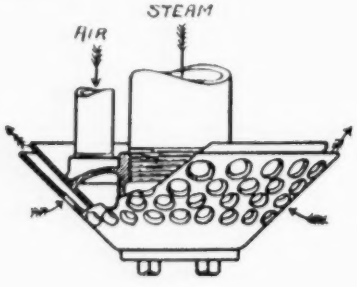


Fig. 21.

Third: Inadequate provision for ventilation. (We should put this third mistake first on the list.)

Fourth: No provision for filtering or sterilizing the water in the pool.

Fifth: Insufficient water supply, openings for supply and escape too small, or inadequate facilities for heating so that an undue length of time is required to empty, clean and refill the pool with warm water.

Sixth: No hose connection with hot or cold water for use in washing the pool.

Seventh: Dimensions that are unusual and difficult to measure for competitive activities; e.g., length 40, 50 or 80 feet.

Eighth: Inadequate and badly located shower baths.

Ninth: No office for swimming instructor or supervisor when he is not teaching. (This last mistake having reference principally to playground and Y. M. C. A. instructive work.)

He further states that undoubtedly the reappearance of one or more of these mistakes is due to the fact that there is little organized and detailed information on the subject available.

The illustrations and descriptions which we have given are intended as a basis for comparison and estimating in the building and heating of swimming pools in order that the mistakes mentioned may be avoided. We suggest therefore,

Some Closing Don'ts.

Don't fail to have the walls of the pool water tight.

Don't fail to have a pure and generous supply of filtered water, storing an extra supply for the purpose of renewal if the filter is inadequate to filter the water as fast as ordinarily supplied to the pool.

Don't have any piping or other attachments obtruding into the pool below the water level, and dispense with all forms of steps in the construction of the pool substituting therefor portable ladders.

Don't fail to have amply supply of heat units available for warming the water in the pool or for tempering the water in the pool after it has first been heated.

Don't fail to have a light and well ventilated room as a swimming pool with sunlight (direct or subdued) or even daylight is much more enticing and will prove more popular than a pool located in a room where artificial lighting is required.

Finis.

CURRENT PRICES OF METALS IN PARIS, FRANCE.

United States Consul-General A. M. Thackara, of Paris, France, reports that the first publication of the usual weekly official metal quotations since the outbreak of the war appeared in the "Journal Official" of December 14, 1914. No quotations are made on Chilean or American copper bars, ordinary or first quality, nor is there any offer of copper ore from Corocoro. Other metals unquoted are Banca and Billiton tin and Silesian zinc. The official prices of various metals on December 5 and 12, 1914, and for the corresponding weeks of 1913 and 1912 follow:

Metals, and Delivery Point	Cents per Pound— Dec. 12, 1914	Dec. 5, 1914	Dec. 5-12, 1913	Dec. 5-12, 1912
Copper ingots, sheets, etc., delivered Harve or Rouen	14.93	14.80	15.36	18.56
Lead, ordinary:				
Delivered Harve or Rouen	5.10	5.07	4.63	4.68
Delivered Paris	5.13	5.11	4.68	4.73
Tin:				
Straits Settlements, delivered Harve	35.89	37.20	40.30	52.44
Cornwall, delivered Paris	35.28	35.90	39.50	51.78
Zinc, good quality, other than Silesian, delivered Harve or Paris	8.32	8.09	5.20	6.34

Tight.

"He's closefisted, isn't he?"

"I should say he is! Why man, he won't even give up any of his bad habits."—Detroit Free Press.

Real Diplomacy.

Hungry Hawkins.—"Do yer mean to say, ye got a square meal o' dat sour woman?"

Diplomatic Mike—"Sure."

Hungry Hawkins—"Well, yer a wonder. How'd yer do it?"

Diplomatic Mike—"When she opened de door I sez: 'Is yer mother at home, mis?'"

Business Methods for the Plumber and Fitter

XXVII.—How to Write and Lay Out an Advertisement That Will Attract the Reader's Attention

By WESLEY A. FINK

Wesley A. Fink.

A candy advertisement which will make matinee girls exclaim, "Why that looks good enough to eat," illustrates effective advertising.

Given a sheet of paper, a pen and an average equipment of brains, how are you going to write an effective advertisement that will sell your goods.

In "System" Mr. MacMartin states that there is one simple rule to accomplish this, and that rule is: "Stick to the subject."

In the days of "anything to attract attention," when the favorite style was the "pretty girl" advertisement with the catch-line, "Beauty, isn't she?" you gave attention to such an advertisement out of respect for the lady, and were led up to the anti-climax "So is the Junk sewing machine," or something equally disappointing.

MacMartin states that while his old employer was personally fond of the ladies, he used to say that no girl had any right in any advertisement unless her presence was necessary to bring out a selling point for the product advertised.

He used to say: "We're not selling girls. We're selling sewing machines. Let the girl show how easy it is to run the sewing machine and she has her place, but don't put anything into an advertisement that does not illustrate or demonstrate or illuminate this argument. Stick to the subject."

The character of advertising copy has changed considerably, but it is still crowded, jammed full of small type. If a man or woman is interested in your product, he or she will read every word that is written. If a man or woman is interested—"Aye, there's the rub." How to first catch his or her interest is the problem. Having done so the copy may go on almost indefinitely.

The desire to buy is very frequently first induced by the attractive way in which the product is presented.

The setting is of vast importance. The picture, if there is one, must infallibly tie up with the reading matter; not to do so is the striking fault in much of the advertising that is not read.

To catch and hold attention, to reach the heart, the daily life, the "human interest" side (as it is so often yet so truly called) is the great thing.

A man or woman will read any advertisement that has in it sufficient appeal to interest him or her. If it hasn't that strong personal element they will pass it by, no matter how well it may be written or how correctly and expensively illustrated.

The problem is to get the appeal into it. This interest feature does exist in every article sold either to men or women.

It has been said, and well said, that the man or woman who does not like children is not normal. And as the vast majority of advertisers are advertising to average, normal people, it is not a bad idea for such advertisers to paste in their hats the fact that the child appeal is important.

With the present day commendable advertising ambition for the picture with the story behind it, the children fit in perfectly with the order of things. They are always brimful of human interest. What they are shown doing is simply a scene which is father to a long chain of action that may easily be imagined as taking place before and after the moment of the picture.

If we will consider for a moment an advertisement illustrated with a pretty picture of a modern bath room and a mother giving her baby its daily bath. What chain of thoughts and desires are aroused in the heart of any mother reading this advertisement? In her mind she sees her child enjoying the luxuries and comforts of the modern bath room. She sees the pretty, white enameled sanitary tub, with running water and combination spigots for tempering the water to the proper heat for the comfort and cleanliness of her child. No heating of water in a teakettle on the stove, no slopping of water on the floor in her kitchen, from a tin wash basin. No carrying of the water outdoors to throw away on the ground to soak into the soil. Just pull the stopper in the bath tub and the water flows away of itself down the waste pipe. After the bath, the tub can be cleaned and wiped dry, and the bathroom is a thing of beauty in the home.

Let us consider an advertisement showing a pretty picture of a modern nursery heated with a steam or hot water radiator and the children in winter romping and playing all over the floor. What chain of thoughts and desires are aroused in the heart of any mother reading this advertisement? In her mind she sees her children enjoying the comforts of the modern sanitary steam and hot water heated home. No draughty halls nor cold floors in her house. Unnecessary sickness prevented and big doctor bills avoided. Her children can roam in any part of her house without fear of catching cold, no matter how hard the storm may rage outside, or how hard the blustering blizzards of winter may blow. She knows her children may play with safety in the modern steam heated home.

The child-appeal advertisement cannot be slapped together helter-skelter and turn out an invariable success. It requires the same tactful handling which all things in the advertising world necessitate.

There are many advertised products which have marched themselves into the public's approbation essentially upon the basis of the child-appeal.

Several camera manufacturers use photographs of children profusely and with great success.

Several manufacturers have used children with true merchandising effect in advertising boilers and radiators. The children are more concerned with the warm comfortable home than any other members of the household, and advertisements showing the children playing on the floor in safety and comfort, make the strongest kind of appeal to parents.

As long as human beings retain their love for children, the child appeal will continue effective.

Crude Oil as Fuel in Heating Systems

Detailed Description of Tests With Crude Oil as Fuel Under Cast Iron Sectional Boilers for Low Pressure Heating

By H. S. HALEY, Member A. S. H. & V. E.*

THE writer desires to present to the Society results of various crude oil fuel tests, under cast iron sectional and water tube boilers in low pressure heating systems, in the vicinity of San Francisco, Cal., during the last three years, and a description of the construction of the mechanical rotary burners developed during that period.

The petroleum production in the State of California as compiled by the Standard Oil Company for the period ending September 30, 1914, averages 289,979 barrels per day, which, during the month of October, sold to the consumers at 77 cents a barrel.

Crude oil is unquestionably the fuel of today on the Pacific Coast, in regard to economy, ability to carry overloads and meet almost instantly wide ranges of loads, boiler and furnace efficiency, absence of smoke, soot or ashes, no loss or deterioration, when stored for any period of time and decreased cost of fuel handling.

The following table shows the specific gravity, weight and heat value of California oils.

Degrees Baumé*	Specific Gravity	Weight per Bbl. in lbs.	B. T. U. per lb.	B. T. U. per bbl.
10	1.0000	350.035	18,280	6,398,000
11	0.9929	347.550	18,340	6,374,100
12	0.9859	345.100	18,400	6,349,800
13	0.9790	342.680	18,460	6,325,900
14	0.9722	340.300	18,520	6,302,400
15	0.9655	337.960	18,580	6,279,300
16	0.9589	335.650	18,640	6,256,500
17	0.9524	333.370	18,700	6,234,000
18	0.9459	331.100	18,760	6,211,400
19	0.9396	328.890	18,820	6,189,700
20	0.9333	326.690	18,880	6,167,900
21	0.9272	324.550	18,940	6,147,000
22	0.9211	322.420	19,000	6,126,000
23	0.9150	320.280	19,060	6,104,500
24	0.9091	318.220	19,120	6,084,400
25	0.9032	316.150	19,180	6,063,800

*10 deg. Baumé equals the weight of water.

The specific gravities, weights and heating values, as tabulated above, were taken from the transactions of the American Society of Mechanical Engineers, Volume 33. The calorific values were determined by means of an Atwater bomb calorimeter, and the specific gravity by means of a Westphal balance or a pycnometer flask at about 63 degrees Fahr. Water was determined by distillation.

The computed values of B.t.u. per pound, and the specific gravity, is given as well as the weight per barrel, and B.t.u. per barrel. From the table is readily seen that the average heating values of a pound of oil increases as the specific gravity diminishes and does not increase so rapidly as the weight per unit of volume diminishes. The heating value per barrel of the heavier oils is therefore greater than that of the light oils.

Crude oil is stored for low pressure heating systems, in cylindrical tanks of ¼-inch steel with seams single riveted or welded, and from 1,500 to 2,500 gallons capacity. These tanks are placed under the sidewalk with or without concrete walls, depending upon the condition of the soil, and judgment of the city fire marshal, who passes upon each installation. Fig. 1 shows several standard methods of the installation of oil tanks, within the City and County of San Francisco, all approved by the fire underwriters.

*Paper presented at the twenty-first annual meeting of the American Society of Heating and Ventilating Engineers, held in New York City, January 19-22, 1915.

COMPARISON OF COST OF OIL, COAL AND WOOD, FUEL IN SAN FRANCISCO, FOR THE PAST SEVEN YEARS

Year	Average Price Fuel Oil at Tank, per bbl.	Price Coal per Ton Delivered	Price Wood per Cord Delivered
1908	$1.10	$11. to $12.	$13. to $14.
1909	1.10	11. " 12.	13. " 14.
1910	1.03	11. " 12.	13. " 14.
1911	.65	11. " 12.	13. " 14.
1912	.65	11. " 12.	13. " 14.
1913	.75	11. " 13.	13. " 14.
1914	.80	11. " 13.	13. " 14.

Comparison of Evaporation with Coal and Oil as Fuel.

The equivalent evaporation in horizontal tubular boilers per pound of coal, may run from 5 pounds as a minimum to 11 pounds or higher, while the evaporation per one pound of oil, may run from 12 to 16 pounds. Coal obtainable in San Francisco, gives an average, equivalent evaporation of about 8 pounds of water, per pound of coal.

Assuming the equivalent evaporation of coal and of oil to be respectively 8 and 12.6 pounds, one pound of coal will be equivalent to .625 pound of oil, or one ton (2,000 lbs.) of coal will equal 1,250 pounds of oil (or 3.71 bbls. of 42 gallons per barrel).

The burning of crude oil as a fuel under cast iron sectional boilers for heating purposes was first undertaken in this vicinity by Mr. Gearhardt, of Fresno, California, about 1900, using the low pressure straight shot burner, and utilizing

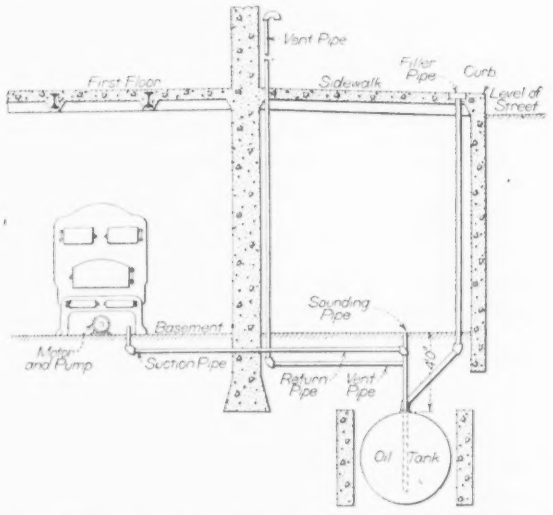


Fig. 1—Illustrating the Heating Boiler and Oil Burner on basement floor. Sidewalk area excavated to curb line. Oil tank buried 4 feet.

the principle of atomization of crude oil by compressed air. The troubles arising from this system were the noise of combustion, the leakage of oil into the furnace, and the breaking of sections of the boilers. In some instances the writer has had experience in the schools of the City and County of San Francisco, where the class rooms over the

Boiler room could not be occupied because of the excessive noise due to combustion.

The first mechanical rotary crude oil burner, utilizing centrifugal force for the atomization of the crude oil, was patented by Mr. Fessler of Berkeley, California, in 1910, and was placed on the market of San Francisco in 1912.

Mechanical atomizing burners consist of a motor driven burner head to which the oil is fed, and which throws the oil off into the furnace by centrifugal force in a finely divided state. The oil pump is operated from the main motor shaft, and the whole apparatus is mounted on a single heavy cast iron bed plate. The apparatus is noiseless in operation, and is entirely automatic, being provided with no-voltage release switches, and automatic arrangement for controlling the oil supply to the burner, from the pressure in the boiler, and is so arranged that the fire cannot be extinguished by its operation. These burners are capable of operating with a clear white fire, free from smoke, within ten minutes after the fire is

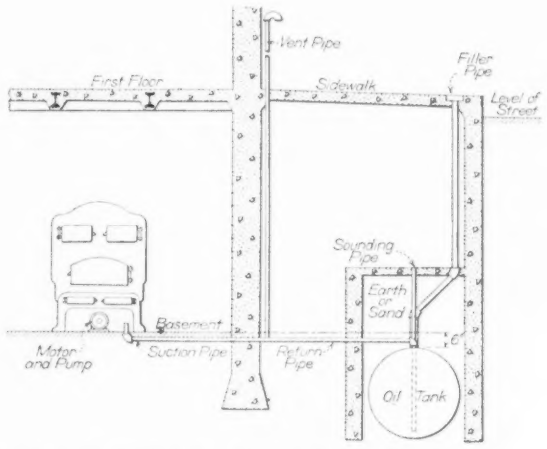


Fig. 1—Illustrating the Heating Boiler and Oil Burner on basement floor. Sidewalk area excavated to curb line. Oil tank 6 inches below floor line. Oil tank covered with 4 feet of earth.

started, and they operate continuously without the formation of carbon in the furnace.

Complete dismantling and the entire removal of the burner and apparatus from the boiler fire box can be made in from 15 to 30 minutes from the time the fire is extinguished.

During the last two years, a burner similar to the Fessler burner has been placed on the market under the name of the "Simplex Centrifugal Rotary Burner," and within the last six months a third type has appeared and is called the "Straight Shot Centrifugal Rotary Crude Oil Burner," manufactured in San Francisco.

In the Fessler and Simplex apparatus the burner head rotates on a vertical shaft driven by bevel gears from the motor shaft, while in the straight shot apparatus, the burner head is mounted directly on the motor shaft and revolves in a horizontal position.

The tests hereinafter described have, in a general way been made in the following manner. The burners are tested for different loads, and in making these tests the oil used by the burner is weighed on a platform scale in a suitable tank. The water used is measured by a Worthington piston meter, and its weight figured from the weight of a cubic foot of water at the temperature of the feed water. The stack gases, feed water, and oil temperatures, are taken by thermometers. The steam is disposed of by blowing directly to the atmosphere thus operating the boiler at atmospheric pressure.

Among the first evaporative tests made were those on the Fessler burner at the Lincoln School, San Francisco, on May 11, 1912. The burner was installed under an Ideal Sectional

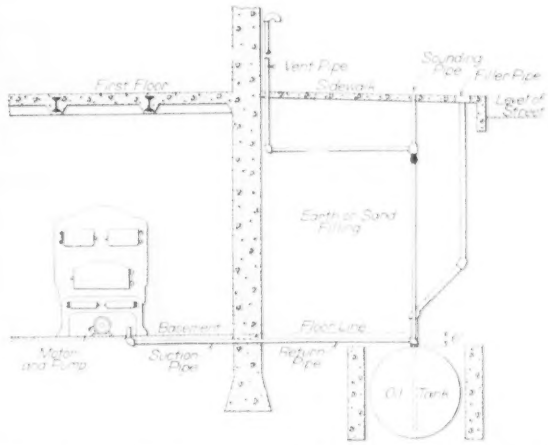


Fig. 1—Illustrating the Heating Boiler and Oil Burner on basement floor. Sidewalk area unexcavated. Oil tank 6 inches below floor line.

boiler S-36-8, and was tested by W. E. Leland, a consulting engineer, assisted by H. L. Delaney. On May 13, 1912, in the same boiler and with the same burner, the writer, at that time mechanical engineer for the City Architect's office of

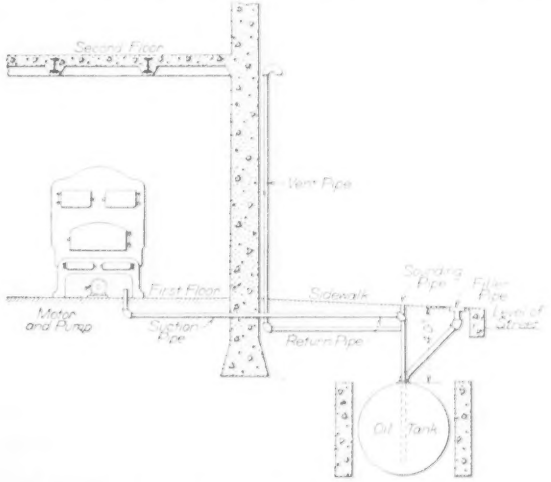


Fig. 1—Illustrating the Heating Boiler and Oil Burner on first floor. Oil tank buried 4 feet below sidewalk at curb line.

the City and County of San Francisco, assisted by H. L. Delaney, made a second test. Both tests are tabulated as follows:

	May 11th	May 13th
Duration of test in hours	1.55	2.
Average temp. feed water, deg. F.	63	63
Average gauge pressure, pounds	3.5	3.
Factor of evaporation	1.158	1.156
Oil consumed, pounds	125	135
Actual water evaporated, pounds	1350	1557
Actual water evaporated per pound oil	10.8	11.53
Equiv. evap. from and at 212 deg. F.	12.5	13.32
Developed load in square feet	3240	3600
Per cent of rating	88.5	98.
Motor horse power	1/3	1/3

The following is the result of an evaporative test made under an Ideal Boiler S-36-6, with the Fessler burner, in April of 1914:

Type of fire	Low	Medium	Heavy
Duration of test, hours	2	3	3
Average temp. feed water, deg. F.	59	59	60
Average temp. stack, deg. F.	490	580	630
Average gauge pressure, pounds	0	0	0
Factor of Evaporation	1.159	1.159	1.158
Oil consumed, pounds	78	167	184
Actual water evaporated, pounds	945	2043	2243
Actual water evaporated, per pound oil	12.11	12.24	12.19
Equiv. evap. from and at 212 deg. F.	14,025	14,186	14,116
Developed load in square feet	2181	3159	3465
Per cent of rating	83.4	120.	132.

REMARKS—A trace of carbon was visible in the low and medium fire tests. No smoke or noise of combustion was noticed in any of the tests. The burner had a maximum range of 1,279 square feet, without smoke or carbon.

The results of an evaporative test made under a 110 Horse Power Badenhausen water tube boiler, with a Fessler burner, at Stockton High School, Stockton, California, in October of 1914, are tabulated below:

Type of fire	Low	Medium	Heavy
Duration of test, hours	2	2	1.19
Average temp. feed water, deg. F.	68	68	68
Average temp. stack, deg. F.	330	334	339
Average gauge pressure, pounds	0	0	0
Factor of evaporation	1.15	1.15	1.15
Oil consumed, pounds	336	432	423
Actual water evaporated, pounds	4232	5694	5525
Actual water evaporated, per pound oil	12.6	13.17	13.08
Equiv. evap. from and at 212 deg. F.	14.49	15.14	15.04
Horse power developed	69.3	95.	140.
Per cent of rating	54.8	86.4	127.

The following table will give an idea of the actual fuel consumption of the Fessler burners, during the last year in fifteen different buildings in San Francisco.

Buildings	Number of Apts. per Bldg.	Service	Fuel oil consumed	Cost of fuel
St. Elizabeth Apts.	72 rooms, 22 apts.	1200 sq. ft. steam rad. and domestic water	406 bbls. in 11 months	$345.00
Schnaittacher Apts.	65 rooms, 16 apts.	1000 sq. ft. water rad. and domestic water	34 bbls. in 1 month	32.30
Otis Elevator Co. (office)		700 sq. ft. water rad.	131 bbls. in 12 months	101.35
Whiteside Apts.	85 rooms, 38 apts.	1200 sq. ft. steam rad. and domestic water	464 bbls. in 12 months	351.48
Hotel Baker	67 rooms	1000 sq. ft. steam rad. and domestic water	165 bbls. in 5 months	127.55
Moore-Watson Dry Goods Co. (warehouse & office)		4500 sq. ft. steam rad.	186 bbls. in 5 months	148.00
Druids Hall		1800 sq. ft. steam rad. and domestic water	60 bbls. in 4 months	52.00
Blackstone Apts.	72 rooms, 42 apts.	1800 sq. ft. steam rad. and domestic water	480 bbls. in 12 months	384.00
Paris Apts.	92 rooms, 16 apts.	2200 sq. ft. steam rad. and domestic water	240 bbls. in 4 months	228.00
Solano Apts.	62 rooms, 28 apts.	1600 sq. ft. steam rad. and domestic water	416 bbls. in 14 months	354.20
Lincoln Hotel	150 rooms, 65 baths	2200 sq. ft. steam rad. and domestic water	700 bbls. in 12 months	609.00
Eastman Kodak Co. (office)		1500 sq. ft. steam rad.	138 bbls. in 12 months	110.00
Inverness Apts.	97 rooms, 27 apts. (2700 gal. salt water plunge)	1850 sq. ft. steam rad. and domestic water	524 bbls. in 7 months	419.20
Holbrook Bldg. (office)	252 rooms, 2 stores	7000 sq. ft. steam rad. and domestic water	734 bbls. in 12 months	601.88

Daily Record of Examiner Bldg. (office) (average run 20 hours daily) Service, 7800 sq. ft. steam rad. and domestic water

Month 1914	Bbls. per day	Cost per day
Jan.	7.22	$5.77
Feb.	6.07	5.60
Mar.	4.06	3.24
Apr.	3.85	3.08
May	4.41	3.52
June	4.12	3.29
July	3.46	2.76
Aug.	3.02	2.41
Sept.	3.24	2.59

NOTE:—Heating is required in San Francisco at all times in the year, there being no definite season.

Fig. 2 shows a cut of the latest type of the Fessler apparatus.

The motor is mounted on wooden insulating blocks, on a heavy cast iron base frame directly in front of the boiler, and the bolts holding it in position are set in fibre insulating bushings, so that the motor is absolutely insulated from the base frame.

The flexible couplings in the shaft between the motor and the worm case, allows for perfect freedom of motion of the armature in its bearings, without binding, due to any inaccuracy in the alignment of the shaft.

SQUARE FEET RATING, AIR PRESSURES, AND ELECTRIC CURRENT CONSUMED BY FESSLER BURNER HEADS

Size Burner Head	Avg. pres. inches water		Motor Consumption per hour	Sq. ft. steam rad. burner will supply
	Top fan	Lower fan		
5⅝ in. Single	1.2	2.45	360 Watts	2000— 3000
6⅜ in. Single	1.8	3.65	533 Watts	3000— 4500
7⅛ in. Single	2.5	5.05	7 Amperes	4500— 6000
7⅝ in. Double	2.25	4.5	8 Amperes	6000— 9000
8⅜ in. Double	2.7	5.4	8.2 Amperes	9000— 12000

Motor has a speed of 1800 R. P. M.

The oil pump is of the twin gear rotary pattern, entirely constructed of bronze with steel driving shaft, and is driven from the main shaft by a worm and worm gear.

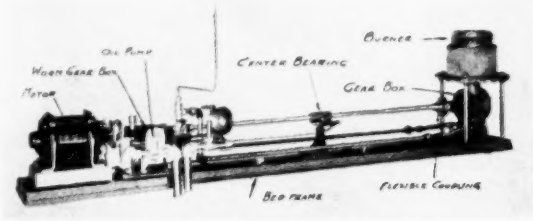


Fig. 2.

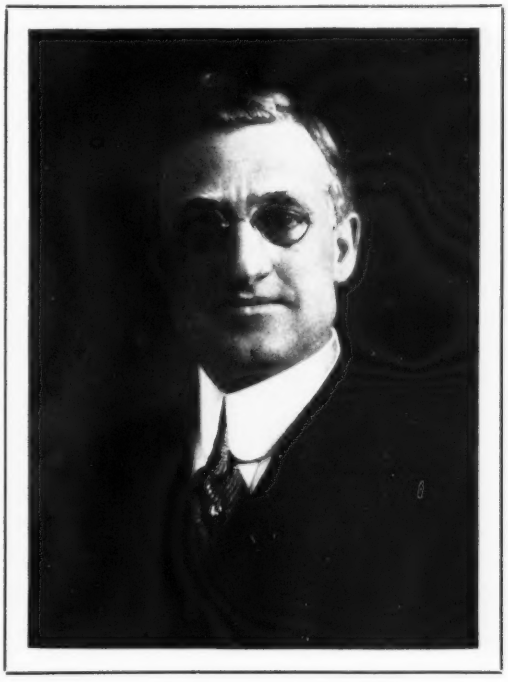
The gear box under the boiler is the housing for enclosing the bevel gears, which transmit the motion from the horizontal driving shaft to the vertical shaft supporting the burner head.

On the bottom of the burner head is constructed a primary air fan of the propeller type, which handles all the air supplied to the burner. At the top of the hub is constructed the two sections of the secondary fan, which are of the multivane type, and deliver the air both above and below the oil spray.

(To be continued.)

Sidelights on Men in the Trade

Soldier and Traveler



WHEN McKinley issued his call for volunteers to fight the Spaniards in 1898, one of the first Chicagoans to respond was a young West Side master plumber, who craved travel and adventure. He enlisted in the Second Regiment, Illinois Volunteers, and went down to Cuba with the army of occupation. True to the traditions of his Teutonic ancestors, camp life and the odor of gunpowder had no particular terrors for him. He went to the front fully expecting to take his chance for better or worse with the enemy.

He longed for a clash with the Spaniards, but the clash never came. Fate was kind to him, for he was denied live shooting practice. He was ordered to proceed to Havana in view of the fact that the enemy had been effectually "trimmed." He was detailed to do police duty in that city under command of Major Russell Harrison. As a military "cop" the young Chicago plumber made good. He paced up and down the narrow streets as the preserver of martial law and order. His keen eye was always open and alert, and the trigger of his Krag-Jorgensen was constantly set for rapid fire action at a moment's notice.

He remained in the army one year without shooting anybody's head off and without catching the fever. Out of his company of 106 men he was the third man who managed to stay off the sick list—all the rest caught the fever. The plumber chap with the khaki uniform was too healthy a proposition for the malaria to down. Maybe the fever realized that he was a plumber, the practical enemy of disease, and so kept away from him.

In 1899 he was mustered out of service. The records of the war department contain the following notation: "Edmund J. Benning, Chicago, Honorably Discharged."

Laying aside his uniform of khaki, he donned a civilian's suit and took a train for Omaha where he was employed for about seven months, until one day a mining company looking for brains and energy discovered him and offered him a job in Alaska. Here was another chance to satisfy his desire for travel and adventure. He jumped at the opportunity. Pulling up his stakes, so to speak, he steered for Nome like a true "soldier of fortune."

During the one season which he spent in the wilds of Alaska, Edmund J. endured many hardships, and he was none the worse for them. He appeared to have a regular lead pipe constitution. The coldest kind of weather didn't phase him at all, at all. He responded to the "call of the wild," not like a tenderfoot, but just like one of your Jack London characters. He delighted in roughing it. He traveled on foot through the interior of the country. He built his own boat at Nome and traveled by water for miles and miles. It was the sort of life that put extra iron and courage into the blood of the plumber from the Windy City.

At the end of the season he returned, in 1901, to the states and went to Seattle, and from there to Portland, Oregon, where he was engaged by the U. S. Government to do plumbing on federal transports. After six months of service in this capacity he returned to Chicago and opened a plumbing shop on Clark Street, near Belmont Avenue. After two years in this location he was obliged to move owing to the sale of the building. His second location shared the same fate in 1907, and it was then that he moved to his present address—1124 Belmont Avenue.

During his honorable career as a master plumber he has done all kinds of apartment, residence and factory work, and his reputation for efficiency and square dealing has made for him a host of true friends.

Edmund J. Benning, who was last year appointed a member of the board of directors of the National Association of Master Plumbers, and who is an ex-president of the Chicago Master Plumbers' Association, was born in Chicago in 1871. His early education was received in the public schools of the city. At the age of twelve he secured employment with a woodworking concern, remaining with them for several years, after which he went to work in the woodworking shop conducted by his father on the West Side. After three years with his father, he tired of life as a woodworker and went out and secured a job in an establishment operated by a plumber named McKinley, at Desplaines and Madison Streets. He served a year of his apprenticeship here and finished the remaining three years at different local shops. He then went forth as a journeyman, but at the age of twenty-four he launched into the plumbing business under the firm name of Rippberger & Benning. After three years the partnership was dissolved, and it was then that E. J. B. was seized in 1898 with the war fever.

Mr. Benning is a man of genial personality. Stalwart, erect, square-jawed, and of military bearing, he makes friends quickly. He looks at the world through philosophical eyes, and his ready sense of humor always keeps the "glooms" off his front porch.

Fred R. Zug, who is erecting a number of residences at Carnegie, Pa., has awarded the plumbing work to A. D. Kiester of that city.

Questions and Answers

HOT WATER SYSTEM PROBABLY AIR BOUND.

Editor "Domestic Engineering":—I enclose sketch of a job that I have been called upon to overhaul. Hot water cannot be drawn at sink or bathroom. The hot water radiator is connected to a coil in the hot air furnace, but does not heat. You will note that a connection has been made into the cold water piping for an expansion, and the tank has not been used.

Please show me how to correct this work.

Imlay City, Mich. R. H. J.

The work mentioned by correspondent is shown in Fig. 1.

We think the reason that hot water cannot be drawn at the sink or bathroom is that the hot water is air bound above the boiler, where it turns down. The system is supplied from a tank on the floor above the boiler and the head is, therefore, very small, insufficient to force the air. In Fig 2 we show a very simple remedy for this trouble—the

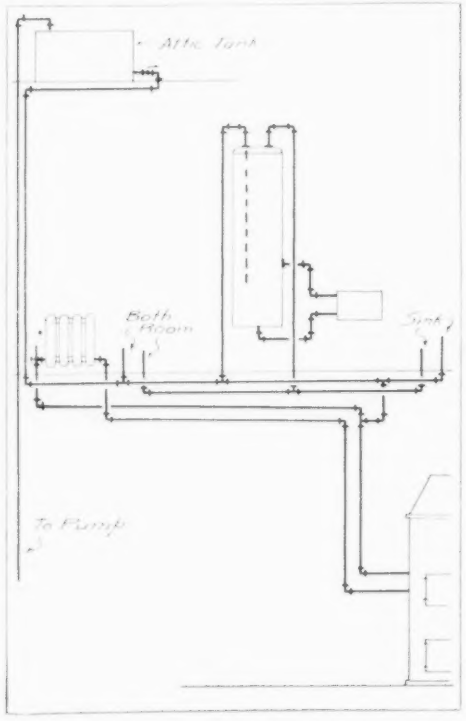


Fig. 1.

use of an expansion pipe from the high point up to and over the tank. Such a pipe should always be used on a tank system of hot water supply.

It may be that the radiator is air bound, for we see no air valve in use.

In order to provide expansion for the furnace coil a connection has been made from the cold water piping with the flow pipe from the coil. This, of course, is absolutely wrong. It, of course, provides the expansion, but it also

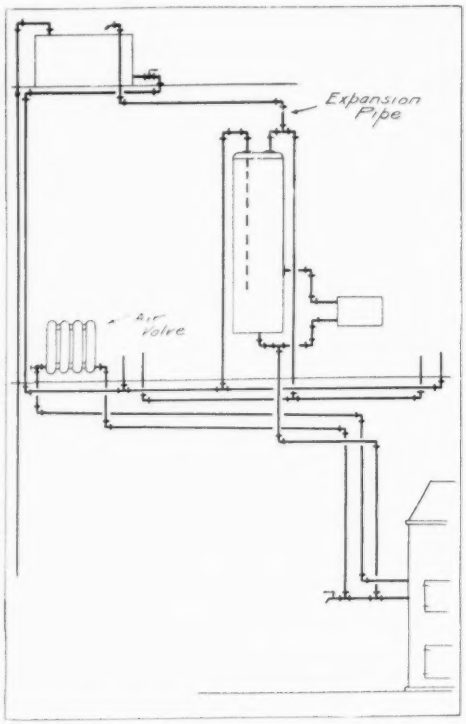


Fig. 2.

prevents the hot water from the coil doing the work that it is intended to do.

In Fig. 2 we show the return to the water front and to the furnace coil tied together. This will provide expansion and allow the radiator to be heated.

A PROBLEM OF HEATING A CHICKEN BROODER.

Editor "Domestic Engineering":—I am to install a horizontal coil about one foot from the floor and with a false floor on top. A piece of cloth is to be hung in front of the coil to keep it enclosed. The coil is to have a heating capacity of 100 degrees under this cover. I enclose a rough sketch of the plant as I intend to install it. The stove can be placed in either of the three locations indicated.

What size pipe would you use out of the stove and what size in the coil?

I expect to excavate for the stove so that I can take the hot water out on a level with the run and then raise the other end two inches. I also expect to use a branch tee nearest the stove. Would you use a branch tee at the other end or return ells? This system is to be fed from a supply tank and it is to heat a chicken brooder. I would like to get your opinion about this layout and about the sizes of the pipes in the coil.

Evansport, Ohio. L. L. A.

The problem submitted by correspondent is not entirely clear, but we believe that we are able to understand his requirements. In answering the communication in detail would advise that the connection to coil or the method

of making up the coil be changed from the method suggested by correspondent. We would not make use of branch tees or manifolds in making up the coil, but would use return bends and would divide the coil into two parts using one valve on the supply as shown on the sketch, Fig. 1. In this manner one-half of the coil may be used at a time or all of it if necessary to give the desired heat.

Without knowing the conditions of exposure and much other information with regard to the building it is quite

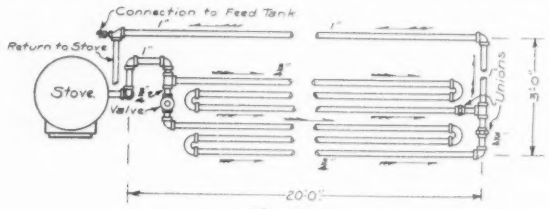


Fig. 1.

impossible to advise the amount of coil or square feet of radiation necessary to give the desired results, but we should judge that six runs of ¾-inch pipe, together with a 1-inch return the length of the chicken brooder (20 feet) would give sufficient radiation, and we show by Fig. 1 a plan of such a coil, and method of connecting to the stove which we understand is either a stove having a coil in the fire pot or a laundry stove having a circulation pot for warming water. We show by Fig. 2 an elevation of the

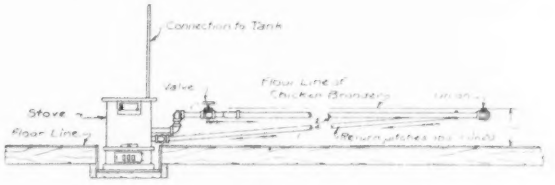


Fig. 2.

coil and connection as suggested and from these sketches correspondent will no doubt be able to plan an apparatus which will cover the conditions of the job.

We note that the heating apparatus or coil is to be fed from a supply tank of some description, and the connection from this tank should be made into the return at a point near the stove. No valves whatever should be placed on this pipe, the supply tank acting as an expansion tank.

HOW TO CONNECT PLATE WARMER TO RANGE BOILER.

Editor "Domestic Engineering":—I have a little job that is puzzling me. I am installing a plumbing system in a summer boarding house, and they want me to put in a radiator (wall style) or a regular plate warmer. They want it to warm plates on. It is to go into the pantry about 15 feet from the range boiler in the kitchen, an 80 gallon boiler on the same floor. I would like to know how I can connect the warmer to the boiler, and whether I would have to use a hot water radiator or a steam warmer. How shall I run the supply and return? If I use a wall radiator it would be about 18 inches or 2 feet above the floor, and if I use a regular plate warmer it would only be four inches above the floor.

Would I have to drop down into the cellar and then go to the boiler for the return? The boiler is vertical and on a regular boiler stand at the side of the range.

Please tell me just where I am to take out connections for flow and return and which is the best to use, steam or water.

Gillette, N. J. J. H. J.

The sketch of the first floor of the residence referred to in the above communication as submitted by corre-

Fig. 1.

spondent is shown by Fig. 1, and the locations of the range, 80 gallon boiler, sink and radiator for plate warmer in pantry are shown on the sketch.

There should be no difficulty in piping the hot water supply to this plate warmer. We advise an overhead or circulating system of piping running the pipe possibly across the ceiling of the store room to point where drop can be made in the pantry to the plate warmer, the return from the plate warmer passing downward through the floor into the basement and returning across the joists and finally rising to the return connection to the water front of the range.

In order to make this method more clear we submit the sketch, Fig. 2, which shows an elevation of the method

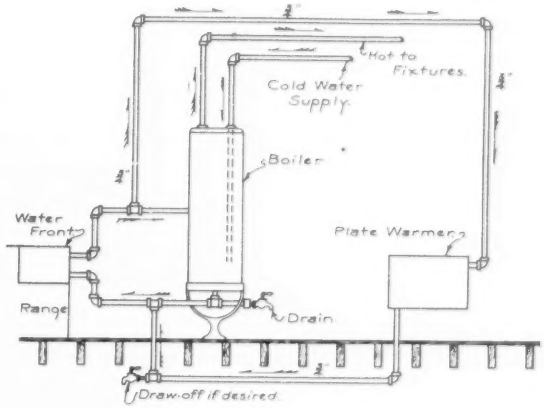


Fig. 2.

of putting in this circulating system. Note that no valves whatever are shown on the circulating pipe; there may be a valve placed on this pipe immediately above the connection from the water front if it is desired to use it, and by closing this valve all of the circulation from the water front will enter the 80-gallon boiler. As the hot

water from the 80 gallon boiler is put in circulation or used only when some fixture is opened the bulk of the circulation will pass upward through the ¾-inch circulating pipe connecting with the plate warmer.

If correspondent so desires he may take the connection to the plate warmer directly from the hot water in storage at the top of the 80-gallon boiler, although this method is not as good as that shown by Fig. 2.

If we understand the proposition correctly we do not see how steam could be used to heat the plate warmer, as there is no steam generator shown on correspondent's sketch or mentioned in his communication.

WHAT IS THE TROUBLE WITH THIS RADIATOR?

Editor "Domestic Engineering":—The accompanying sketch shows the layout of a heating system (Fig. 1), which I installed last fall. The plant is working in fine shape with the exception of one small radiator which is

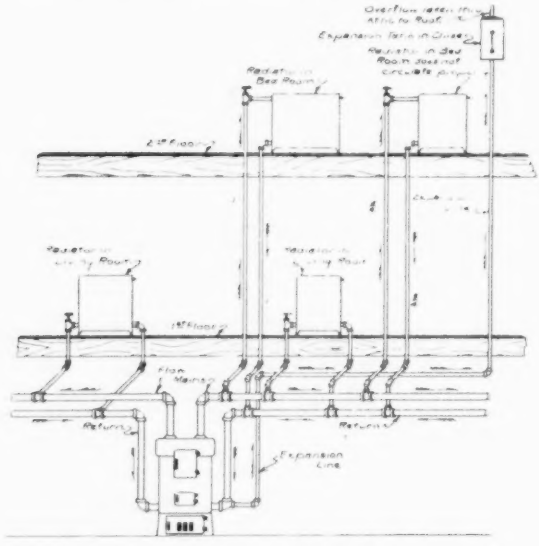


Fig. 1.

getting airbound. This radiator contains 25 sq. ft. of heating surface, with ¾-inch top supply, and the expansion pipe is connected to the bottom of the boiler. I cannot account for this deficiency on the part of that radiator. What is the cause?

Wabasha, Minn. C. W. M.

We can see no reason why the radiator mentioned in the above communication and shown on the sketch, Fig. 1 (a reproduction of the pencil sketch submitted by correspondent), does not circulate properly. Correspondent has not marked the sizes of the mains, branches and radiators and therefore we have no means of knowing whether the same are of sufficient size or not.

From the information given we are led to believe that the trouble is entirely due to the method of taking the branch connections from the main to the various risers or radiator connections. Unless the main is properly sized and the connections to each radiator properly made there will be a robbing of the circulation from some radiators supplied by it, and we advocate that correspondent examine the plant along this basis.

First, see that the area of the main is sufficient at every point to supply all of the radiators connected to it beyond the point of examination. The valve area of the radiators may be used as a basis. For example, suppose the main were to feed one 1-inch valve, one 1¼-inch valve and one ¾-inch valve. The area of a 1-inch valve is .78, the area of a 1¼-inch valve is 1.22 and the area of a ¾-inch valve is .44. Adding these together gives a total valve area of 2.44. Therefore the main at this point should have an area of 2.44 or more to supply these three radiators; as a 1¼-inch pipe is 1.76 in area the next size of pipe is required; this would be a 2-inch pipe having an area of 3.14.

Examine the connections to branches along the main and by feeling with the hand determine the point where the circulation seems to begin to lessen or where the circulation is sluggish. This would indicate that the connection is not receiving its full supply of hot water and one of two reasons can be found for this. The main is not sufficient up to the point examined to supply sufficient circulation or the branch connections up to the point examined are made in such a manner as to rob the circulation from the radiator beyond. In this way correspondent can easily locate the trouble and we think from the above suggestions he will be able to cure it.

HOT WATER TANKS FOR APARTMENT BUILDINGS.

Editor "Domestic Engineering": Will you kindly publish a table showing sizes of hot water tanks for apartment buildings containing various numbers of apartments?

Logansport, Ind. Inquirer.

We believe the following table will give "Inquirer" the information he is seeking.

It will be observed that we give also a column of figures showing how the capacity per family can be reduced as the size of the tank is increased:

No. Families Supplied	Tank Capacity per Family	Size of Tank
10 to 15	22 to 25 gals.	250 gals.
15 to 20	20 to 22 gals.	330 gals.
20 to 25	18 to 20 gals.	400 gals.
25 to 30	16 to 18 gals.	450 gals.

The above table does not include hot water for laundry purposes. If the latter is to be included, the tank should have not less than 50 per cent greater capacity than the capacity shown in the above table. The reason for this is that on washing days there arises a greatly increased demand for hot water, which the capacities named would not provide for.

PUBLIC COMFORT STATIONS.

Architect J. H. Jeffers, of Mason City, Iowa, has prepared plans for the erection of a public comfort station in that city. This station will be the first one of the kind in Mason City.

The matter of a public comfort or retiring station in Fountain square, Springfield, O., has been under consideration for some time by the city authorities, and it is intended, if possible, to get definite action on the proposition during the spring or summer. The funds will be available, it is expected, and about all that is delaying the improvement, which is badly needed, is street work, which is in progress in the central part of the city, and which it is thought best to finish before beginning work on the comfort station.

A public comfort station will be constructed in Jamestown, N. Y., within the next few months.

Export Trade and How to Get It

How to Secure Foreign Trade in South America and How to Keep It

By G. F. BAGGE-FERON

This article is intended for the American manufacturer and business man who desires to secure foreign trade especially in Latin-America. Its object is to give some inside information about what is needed and how to go about it from the start. It also aims to make the reader familiar with various conditions over-sea. It is written by a Swede, who has lived in a vast number of foreign countries and accumulated knowledge and experience, as a commercial traveler and office man, concerning international trade relations.—Editor.

THE only mystery about export trade is the peculiarity of each country, making it necessary to know what to do and this in the right way, to get in touch with the over-sea buyer. Always you will find in magazines devoted to export trade some sort of article, pro or con, according to the particular experience of the respective author. Some may influence those interested just in the opposite direction of what was intended. Others again may feel inclined to make a trial, but are generally handicapped as to how to get hold of the necessary data, so easily obtainable, without risking too much, especially, if not a very large fund is at hand for the expansion of over-sea business.

This article is intended to give progressive firms some practical points they should observe right now, under the present conditions, in order to be ready to act when improvement in the world's commerce will take place. He who is first at the mill will have some advantage over the other fellow.

The only separation from the remotest corner of the globe existing today is time and distance. Every over-sea buyer is quite as able or clever in commercial transactions as the American manufacturer; the only drawback being that they do not know each other. The foreign field cannot be conquered by waiting, neither can it be taken in a rush. The first efforts bring practical results, say in one year or so, and there are many different ways open for a beginning, which the following will explain as well as show some kind of comparison in regard to the expenses of the different methods:

Primo: There is the sending out of a salesman or trade-ambassador.

Secundo: The advertising method by trade paper with circulation in the foreign countries.

Third: The direct efforts by mail.

The first method will naturally involve a more substantial outlay in cash and will at the same time bring better results, even if the first orders are not generally of large size, the material collected with personal introduction to the buyer is good for all time to come. But owing to actual circumstances in the uncertain and irregular maritime connections, the second and third medium will be the more suitable and as well, be the more economical.

Besides a reasonably large advertisement, it is absolutely necessary to prepare business literature in the language of the country with which relations are sought, because the native has not the facility to learn English, nor the time to do so, neither does his activity require it for his business. It is quite another thing for the manufacturer who is in touch with a great number of people in the different places. There are many American manufacturers of specialties who can successfully develop foreign trade relation direct and with little supplementary work besides the daily routine, but with domestic catalogues, etc., it will take a long time and the cream of the opportunities will be gone.

On the other hand, there are many foreign buyers who are very much alive to the opportunity of ordering goods from foreign sources by cable or mail, when they have the maker's name and address and know his products. Every American knows today that Latin-America is using the Spanish language, but there may be a few who overlook the fact that Brazil is an exception. It cannot be worked with success without Portuguese. Spanish will be apt to do more harm than good; even French or German is preferable, and in some parts the Italian element is quite pronounced.

The only inconvenience in this case is to have an extra translation made into Portuguese, besides the Spanish one.

Translation from English into a foreign language is obtainable for about $3.00 to $4.00 per thousand words. The nearest Chamber of Commerce will direct you to some reliable person who is capable of translating the text properly. In case the domestic catalogue is of large size, it would be advisable to sub-divide same and start with a condensed portion, but have plenty of illustrations, as they are preferable in many ways.

Business Literature in Foreign Languages

In planning the make-up of foreign printed matter, whatever it may be, a booklet, a folder, a catalogue, price list, etc., we have to consider a lot of things which are not used generally in the domestic trade practice and which are of immense importance to the man over-sea.

A few items are packing, the metric system, code-words, and what I would call neutrality and reciprocity, each of which are of the utmost importance and have to be handled carefully in every detail.

Assuming that the man on the other end is studying the article and he likes it and wants to get it, as a rule he would only know the quotation f. o. b. factory, it will be impossible for him to make out what the goods will cost him before they are in his possession. When they will arrive, in what condition, and how much duty he has to pay, are other questions. It is much more troublesome for him in some inland place to learn the freight on the ocean or say from the factory to port and it often takes several months to get the right information.

By any over-sea relation it is therefore necessary to convince the buyer that you are up-to-date in every respect, and the simplest thing is to make your literature an unquestionable evidence. This gives confidence from the very start. The buyer has to get a guarantee that before he orders and possibly sends "cash with order," or pays against shipping f. o. b. American port, that the goods will reach him in good condition, so it will be a profitable transaction for him from beginning to end.

Have you ever heard about the sending of roll-top desks, which were bought and paid for f. o. b. New York, and which arrived without exception in bad condition, every one being smashed on account of poor packing?

The party had all the trouble to recover some damage from the insurance company, besides being forced to take off the goods and pay duty on them. Even if the loss could be balanced after repair, the whole transaction would be a failure from A to Z and put a bad light on the sender's competence to handle export trade. In many cases such occurrences bring valuable material to industrious parties who get acquainted with the construction of the goods in hand, enabling them to make some substitute of their own, the final result being to start an industry which was not intended at all. The responsibility rests with the sender, who got his cash and cannot make good, even if he should replace the goods with new stuff gratis or at reduced prices. When any party over-sea contemplates to enter into relation with a new concern, he has to be sure not only that he will get the goods ordered, but also when they will arrive and the condition they will be in when they reach his custom house. Just for this reason you can be sure that the buyer will stick to you forever if he gets satisfaction. He is not inclined to change to another source so easy, as he might run such risks as named.

The Metric System.

Nearly all foreign countries are adopting the metric system and in the following it is obligatory by law: Argentine, Brazil, Chile, Colombia, Costa Rica, Cuba, French Colonies, Guatemala, Honduras, Mexico, Nicaragua, Peru and Uruguay.

It may be useful to state here the relation of some ordinary measurements to the metric system for daily use: 1 meter=40 inches; 1 kilometer=⅝ mile; 1 gram=15 grains; 1 kilo (gram)=2 pounds; 1 liter=2 quarts; 1 hectoliter=1 barrel; 1 hectare=2½ acres.

To convert inches into meter and centimeter is a pretty simple thing, if the inches are multiplied by .25, the results is centimeter (c/m) or vice versa. Divide the centimeter by .25, it will give the inches; as one inch is equal to 0,025 meter or 2,5 c/m or 25 m/m, (millimeters). There is no need of using the metric measure for a box 64"x31"x 22" in this way 1,625x0.787x0,558 meter, it would be correct, but after the above, simply 162x78x55 c/m is quite adequate.

The packing is not a matter of common daily practice. When the goods have to go a long distance over sea, there are so many conditions different from the domestic shipment. Every packer should constantly bear in mind, what can happen to the goods during transit, not only the material itself, such as the bumping and rubbing of one piece against another by rough handling, but what can affect it from the outside, during the long journey. When the case is in the hold of the ship, heavier goods can damage it, while the ship is rolling, or when exposed to the tropical rain or sea water. The stevedores abroad are not apt to be very careful, especially if the cases are of some considerable weight and can only be handled by hand.

There should be made free use of what could be called the "Safety-belt" for a box. This consists of a board fixed on the outside, all around, either one in the center or two on both ends, about one-quarter of the total length of the box toward the center. This belt gives the wanted stiffening and serves as footing and sliding base; it keeps the box off the ground and provides for access for the grip while handling. The corners or angles can be reinforced by a metal strap.

Delicate goods should always be packed in zinc-lined cases, in order to protect them fully against moisture (salt water dampness). The zinc sheet is not to be nailed onto the wood, but soldered in every joint, so as to make it perfectly hermetically closed; the top-sheet, after the goods are packed, is also soldered on, and while nailing the cover, care must be taken that the nails do not injure the lining. For such packing the custom is to charge extra 3 to 5 per cent of the total amount of the bill, and this is nowhere objected to. Everybody is disposed to pay extra for good packing, instead of running an extra risk. Any other less delicate merchandise gets ample protection when the box is lined with tar-paper or something like it. This should be placed in such a way that it overlaps the sheets in a zig-zag manner, to protect it from water, dust, insects, etc. It is sometimes preferable to use hay or straw instead of excelsior, as the latter shrinks considerably when it gets wet and loses its resiliency.

By marking the cases, any unnecessary wording should be avoided; it is not good practice to brand the lettering. This can be done in some trades but very often it makes the reading more difficult. The simpler the better, and weight and measurements must be marked clearly, together with the place of destination, as follows:

A. B. C. & Co., No. 9876	Peso kilo	185—Brutto
Rosario de Santa Fe,	Peso kilo	143—Netto
Argentina.	64 x 31 x 22 in.	25—2 cu. ft.

For maritime freight only is it necessary to indicate the volume and cubic feet, as some class of goods does not come under the weight tariff, and often is subject to the choice of the transportation company. It also happens that the same kind of goods is handled with either tariff on account of the way the goods are packed. At any rate, if there are instructions from the buyer regarding packing, never neglect to follow them with the utmost care. There are many special reasons for specific arrangements. Sometimes the mixing of various pieces of different finish makes the duty more for others, etc., and it is also possible that the buyer will split his sending in some way, or possibly has to transport the goods on mule back or the like.

Every article should have its code-word so it is possible to order by cable or to refer to same in correspondence, in order to eliminate error. The telegraphic key-system of every firm should be extensively worked out. Some houses make a clever use of private code-systems and by certain combinations they reduce the code-words or parts of words to one word, and save a good deal thereby. For instance, if your main key-word ends with a vowel and is short, any other consonant or syllable may be added to same, to give a certain predetermined meaning, as to finish or quantity, or size, provided the final combination word has not more than the maximum of 10 letters or characters.

Your stationery should always state the official telegraphic code you are familiar with and by which the party over-sea can communicate with you, also a clear indication of your cable-address, for instance: Cable address: Direcion telegrafico: "Simplico, Springfield, Ohio." Codigos: Liebers, A B C, 4th & 5th Editions.

Having this applied in a practical way will show the man over-sea at once, that the house is up-to-date and will secure more attention. Not referring further to the saving of time and money and other trouble, it should not be forgotten that at just the present time any foreign literature will find a considerably better reception everywhere than heretofore. The people in South America are exceedingly progressive and many Americans coming for the first time down there are really surprised to find how advanced they are.

A great number of manufacturers in Europe have for

years used a certain system of neutral catalogs, which have made them fortunes and this scheme can be applied anywhere with great success. By this the smaller manufacturer gets the benefit of marketing his own products. It consists in having the printed matter so prepared, that the provenience (place of origin or manufacture) can easily be taken out by the man over-sea. As a rule it is only necessary to have the name of a firm or manufacturer appear on one page, and when perforated this can be taken out without spoiling the binding. This permits the buyer to use the printed matter for his own use, without stating where he gets the article from. Everyone and especially an importing house likes to keep his sources secret and when using the original price list, it often happens that some go-between gets the name of the maker and gets in some indirect way the same goods and the party who really started to work it in, is out of it.

The use of neutral literature has its advantages and disadvantages. It depends on the angle from which the matter is seen. Being over-sea and getting a neutral catalog in hand will at once give notice that the house has not tied itself down with any firm, and the goods can be handled with little or no competition, and by neutral literature. The buyer will understand that your policy is to protect him if he makes some particular efforts for your goods. Many times the illustrations are being cut out and used for the internal service and also the possible name in the cut itself is erased. This is all done away with, by use of neutral literature. The foreign business is an individual one and not a marketing of a product as by domestic trade, where there is little or no European competition.

In compiling a catalog to be printed in say two or three languages, it will be economical to get all the general text, dimensions, weights and code-words set up with cuts, to be printed in one run for the whole lot. It would probably be convenient to arrange an issue of 10,000 as follows: 4,000 in English, one-half without firm name; 2,000 in Spanish, 1,000 neutral; 2,000 in Portuguese, 1,000 neutral, or in any other proportion suitable to the object and field to be covered. By mailing them it would be advisable to send them in duplicate if not in triplicate; one with firm name and two neutral, i. e., without firm name.

The extensive use of this neutral business literature has been used by many large and small manufacturers in the old country and with good success. It gives a better impression than the known folder with the blank space for the agent's name.

When making up the quotation the prices should at least be f. o. b. (boxed for export), American port but it would be better to make the prices c. i. f. nearest port of client, and the rates for establishing the maritime transport are easily obtained from the various forwarding agents, who also arrange for consolidated shipments, where several sendings can be sent on one bill of lading, in order to reduce the expenses, by the minimum freight charges for each. By such arrangement it must be handled all in one manipulation in passing the custom house over-sea, and then distributed or forwarded.

Parcel post packages can be sent to all South American Republics, except Argentine.

(To be continued.)

Cobleskill, N. Y.—L. D. Letts & Sons have just closed a very successful season, having had several good-sized jobs, among them being the heating and plumbing of the new county clerk's office located at Schoharie.

A "CONCRETE" IDEA IN WATER CLOSET CONSTRUCTION.

By W. R. Marshall.

Sanitary potters and designers, take notice!

Once in a while some freak is unearthed that is worthy of mention. The closet (?) illustrated in the accompanying cut is such a one. This brilliant (?) idea was discovered by A. C. Shaver, Chief Plumbing Inspector, of Pasadena, California, who confiscated it from an indignant owner. This man wanted to know why he couldn't use it and what was the matter with it? "He did his own plumbin' in Ioway and didn't see why he couldn't in Caleforney."

No, it is not a hopper, but an attempt to manufacture a water closet with cement, sand, a little water, and an idea to—beat that durn Plumbers' Trust. But the question naturally asked—if it is not a hopper, what is it? The answer is—it is not a hopper, because it has a trap. What do you mean—a trap—and how did he get it in? Simple, very simple, gentle reader. He, the "architect and manufacturer" of this "Whatisit," twisted a gunny sack into a roll and formed it into an S, and when the cement set, he pulled the gunny sack out, by gosh, and lo! he had his water way. For a spud he set in an inch and a quarter iron coupling. A flushing rim? No, indeed—didn't need it. The beautifully shaped rim is the seat. Note the particular attention paid to the foot or floor flange, with bolt holes to fasten it down. The water connection is unique—a three-quarter inch compression hose bibb threaded for iron pipe, screwed into two couplings, furnished the shut-off, and did away with those pesky tanks that always get out of order.

A Concrete Water Closet.

If this "Whatisit" had been discovered fifty feet below ground in Darkest Africa, or some other dim light country, the museums of the world would be fighting for its possession and trying to fix a date somewhere about "3711 B. C." as the era to which it belonged.

Paw Knows Everything.

Willie—"Paw, does love make the world go round?"

Paw—"I guess it does, my son. I had a touch of the disease just before I got married and I have been seasick ever since."

Maw—"Willie, you go up in the attic and stay there until I call you."—Cincinnati Enquirer.

NEW PLUMBING ORDINANCE FOR MARIETTA, O.

AN ordinance to provide for licensing plumbers and sewer builders, and in connection therewith to afford protection to the water and sewer pipes and to the streets, alleys, avenues, and public grounds, and the pavement of the same, and to determine the conditions under which these may be opened or the pavements thereof removed.

Be it ordained by the Council of the City of Marietta, State of Ohio:

Section 1. No person shall be authorized or permitted to do the work of making connections with any public sewers or drains, or lateral connections, excepting he be a licensed plumber or sewer builder, and no person shall be authorized or permitted to make any attachments, additions to or alterations in any service pipe, cock or other fixture connected with the service water pipes, except he be a licensed plumber, which license shall be obtained in each instance by the applicant registering his name and place of business in the office of the Director of Public Service and receiving a license certificate from the Mayor. No person shall be licensed until he has furnished the Mayor with a satisfactory certificate, signed by at least two reputable sewer builders if he be a sewer builder, or two reputable plumbers if he be a plumber, to the effect that the applicant is regularly educated to the business and qualified for the duties which he undertakes. And previous to being authorized or licensed by the Mayor he shall file a bond in the sum of One Thousand Dollars ($1,000.00), with two or more sureties to the approval of the Mayor, conditioned that he will indemnify and save harmless the City of Marietta from all loss or damage that may be occasioned in any wise by accident or from the want of care or skill on his part, or that of his servants or employes, in the prosecution of such work, or that may be caused by reason of his opening or removing any pavement in any of the paved streets, alleys, avenues or public grounds in said City, or by reason of his making any excavation in any of the streets, alleys, avenues or public grounds in said city, without regard as to the purpose for which such openings or excavations may have been made, in the making of any connection with any public or private sewer, or any work upon any water line, service water pipe, or fixtures connected therewith; and conditioned also that he will promptly at the proper time, or as directed by the Director of Public Service, replace and restore the street, alley, avenue, or public ground (including all pavements), as the case may be, over such opening, to as good a state and condition as he found it previous to opening or excavating the same, and that he will conform in all respects to the rules and regulations which may be from time to time established by the Director of Public Service or by the City Council in relation to the construction, repair, or regulation of any public sewers or drains, water pipes, or fixtures connected therewith. Said bond shall be filed with the City Auditor.

Section 2. No person except a duly licensed sewer builder or plumber under the provisions of section one, or a duly authorized city official, or a person operating a public service or utility enterprise under a franchise granted by the city and acting within the authority of said franchise, shall be authorized or permitted to make any opening or remove any of the pavement in any of the paved streets, alleys, avenues or public grounds, or shall be authorized or permitted to make any excavation in any street, alley, avenue or public ground in said city, for the purpose of laying down, connecting with, or repairing of water or gas pipes, or with the sewers, drains, or ditches, or for any other purpose whatsoever.

Section 3. Before any person authorized thereunto in the preceding section shall make any opening or remove any pavement in any of the paved streets, alleys, avenues, or public grounds in the city or shall make any excavations in any street, alley, avenue, or public ground in the city, such person shall file with the Director of Public Service a written or printed application setting forth and indicating therein the number, location, kind and extent of the openings to be made and the time when such openings are desired or necessary, together with the length of time the opening is expected to remain open; and upon the proper filing of such application the Director of Public Service may issue a permit for such opening or excavation; provided, however, that no opening shall remain open continuously for a period of longer than forty-eight hours without a renewal permit therefor being obtained from said Director of Public Service.

Section 4. Whenever any person so authorized shall make or cause to be made any excavation in any streets, alleys, avenues, or public grounds of the city, they shall replace the brick or earth excavated, and all other materials which they have removed or may disturb in making said opening or excavation, so that the street, alley, avenue or public ground shall be put in as good and permanent condition and repair as the same was before such opening or excavation was made and such brick and materials removed, and the said Director of Public Service may, at his option, withhold further permits from the person responsible for such replacement and repairs until they are fully completed to the satisfaction of said Director. And in case such person shall refuse or neglect to do the things required of him in this section, it is hereby made the duty of the Director of Public Service to cause said opening or excavation to be filled and the said street, alley, avenue or public grounds to be repaired and he shall collect the expenses and cost of same from the said person liable therefor by civil action in any court having jurisdiction, and the surety upon the bond of the said person shall be fully liable therefor. The word "street" as used in this ordinance, shall be construed and intended to include sidewalks and gutters.

Section 5. No second permit for the purpose mentioned in Section 2 of this ordinance shall be granted until all damages, costs and expenses of the said City arising by reason of anything done or left undone by said person, under any permit previously granted, are fully paid.

Section 6. All authority extending to any city official named in this ordinance shall in like manner extend to the city official exercising the same or like functions in reference to the subject matter, though his official name or designation be subsequently changed by the statute to one different from that herein given.

Section 7. Any person or persons violating any of the provisions of this ordinance shall, on conviction thereof be fined in any sum not exceeding Fifty Dollars ($50.00).

Section 8. That all ordinances or parts of ordinances inconsistent herewith be repealed and this ordinance shall take effect and be in force from and after the earliest period allowed by law.

This ordinance was passed and approved in December last year, and is now in force. In this connection it may be of interest to note that Marietta has a population of about 18,000.

Wisconsin Master Fitters in Annual Convention

The Wisconsin State Association of Master Steam and Hot Water Fitters' Fifth Annual Convention

The fifth annual convention of the Wisconsin State Association of Master Steam and Hot Water Fitters was held Monday, January 18th, at the Elks' Club, Milwaukee, Wis.

Sixty members of the association from various sections of the state were in attendance. Out of the state membership of sixty-seven, only seven members were absent.

The convention was formally called to order at 11 a. m. by State President Hugo Franke, of Milwaukee, who welcomed the delegates to the famous city. After the appointment of committees the convention adjourned until 2 p. m.

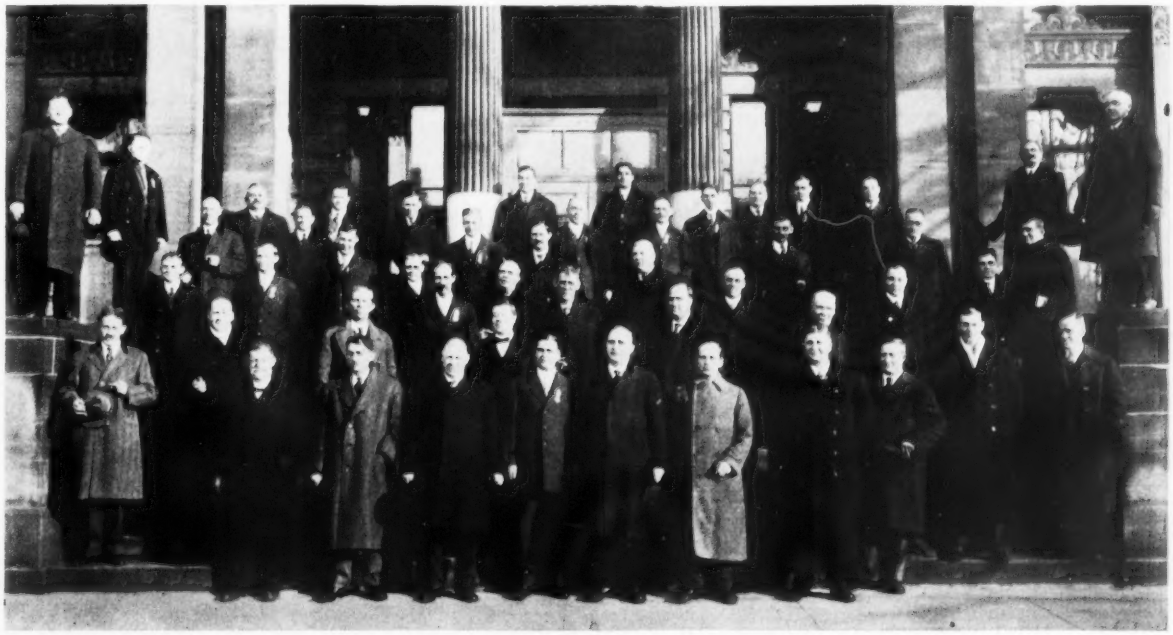
Afternoon Session.

Regular routine business and discussions occupied the attention of the delegates until 6 p. m. During this session, by the diners. An attractive vaudeville program was another enjoyable feature of the evening.

Among the speakers at the festive board were: George F. Reeke, Green Bay; Attorneys William Zimmers and Leo F. Nohl, both of Milwaukee; Herman Luedke, Milwaukee, and F. E. Green, of Janesville.

Mr. Reeke declared, during the course of his address, that his pet subject was "overhead expense." He praised the trade papers for their illuminating articles treating on this theme. He urged members to give closer attention to "overhead expense" problems during 1915.

Attorney Zimmers complimented the members on the broad spirit of good fellowship which prevailed at the banquet among men who are each other's competitors in every day life. He said that all business serves but two



Delegates to the Fifth Annual Convention of the Wisconsin State Association of Master Steam and Hot Water Fitters, Held in Milwaukee, Wis., January 18, 1915.

which was an executive one, the following officers for the ensuing year were elected: President, Edmund Grassler, Milwaukee; vice-president, James Smollen, Racine; secretary-treasurer, Fred Kaufmann, Milwaukee; sergeant-at-arms, Otto Biefeld, Watertown. Board of Directors: F. H. Meadows, Milwaukee; E. H. Sonnemann, Sheboygan; Frank Kraft, Kenosha; Hugo Franke, Milwaukee; George F. Reeke, Green Bay.

Banquet, the Closing Feature.

At 8:30 p. m. an exceedingly elaborate banquet was given at the Elks' Club. Hugo Franke, of Milwaukee, presided as toastmaster. A humorous feature of the feast was observable in the rare assortment of dunce caps worn

purposes: First, to serve society, and, second, to make money, and that he who serves society best profits most.

Attorney Nohl expressed himself in an exceedingly witty vein. "I am not going to get up enough steam to damage what my learned friend Zimmers has already said," began Attorney Nohl. "Gentlemen, notwithstanding the fact that you all 'hit the pipe' I see that you are hitting cigars this evening. It takes a lawyer to understand a steamfitter. The business of a steamfitter requires water; that of a lawyer requires air. Next to the ministry the steamfitting business is the 'hole-est' business there is. The pipe has a hole in it, so has the elbow, likewise the valve; and the boiler, gentlemen, is full of holes." (Hearty applause.)

BOSTON PLUMBERS' ANNUAL BANQUET.

The Master Plumbers' Association of Boston and Vicinity began the new year with its annual banquet and installation of officers held at its headquarters, 24 Hayward Place, on Thursday evening, January 14th. The new officials were inducted into office by Edward C. Kelley, a past-president of the organization.

Reports of the officers for 1914 occupied the first part of the evening's program. The retiring president, Orren C. Poole, summarized the year's work in his report. He referred to the work performed by the executive and conference committees and the organization's very pleasant relations with the journeymen and their union. He also spoke of the National convention at Atlantic City and declared the association should feel proud of the fact that one of its members, James S. Cassedy, of Cambridge, was elected to the high office of vice-president in the national body.

Mr. Poole stated that association literature had been more widely circulated and the work of the organization brought before the public in a more favorable light the past year than ever before. Among his recommendations was one for the appointment of an educational committee to arrange for a series of talks on subjects of interest to plumbers to be held at least once a month.

Secretary William A. Tucker, the first permanent secretary of the association, having completed a year's service, made a report covering the work done. He reported that there had been a gain in membership and that there are now more plumbers enrolled than at any time for several years. He spoke of the credit information bureau recently inaugurated by the association, for which he is largely responsible, and referred at length to the evils of members working for so-called general contractors and of the importance of using every effort to bring about the direct letting of contracts.

Mr. Tucker thought the association had had a very successful year and strongly advised the adoption of some uniform system of estimating overhead expenses.

Both the financial secretary, J. Preston Perham, and the treasurer, P. A. Lang, reported on the good financial condition of the organization. Following the reading of the reports the installation of officers took place, the new officers and committees being:

President, Walter P. Jones; vice-president, Charles H. Smith; secretary, William A. Tucker; financial secretary, J. Preston Perham; treasurer, P. A. Lang.

Executive committee: The officers and David Craig, Andrew F. Curtin, Nicholas J. Kelly, John W. Zehringer and Frank B. Connor.

Auditing committee: James G. Gillespie, A. Frank Bonney and James P. Mahon.

Conference committee: Walter P. Jones, David Craig, P. J. Sullivan, Charles H. Smith and Orren C. Poole.

Legislative committee: James S. Cassedy, William N. McKenna, Frank B. Connor, James G. Gillespie and Edwin W. Cox.

After the installation exercises the meeting adjourned to partake of a bountiful spread provided by the efficient entertainment committee under the chairmanship of Joseph P. Williams.

Among those present were: Orren C. Poole, Walter P. Jones, J. Preston Perham, Daniel G. Finnerty, David Craig, Edward C. Kelley, John C. Kelley, P. A. Lang, Charles H. Smith, Daniel Shannon, David F. Keefe, Andrew F. Curtin, Frank B. Connor, John J. Vogel, James P. Mahon, John W. Zehringer, Joseph P. Williams, William N. McKenna, Nicolas J. Kelly, Herman Kraus, Louis E. Boyden, Frank J. Callan, F. F. Muldowney, Daniel T. Duggan, Joseph P. Riley, James P. Riley and William A. Tucker.

NORTH SHORE PLUMBERS' GIFT NIGHT.

The annual "gift night" of the Massachusetts North Shore Association of Master Plumbers, designated this year as a "love feast," was held on Wednesday evening, January 13th, in the Association rooms at Salem. To use the expression of Secretary Trow, who was one of the prime movers in the affair, "the event was a scream from start to finish."

Fred Herrick, the plumber-farmer of the organization, was presented with a real live rooster with feathers of the most vivid coloring, and it is a safe bet that if "Tom" McDonald and "Jim" Trow can be induced to wear the officials robes, which were wished upon them, to the ladies' night they will be the center of attraction.

After two hours of fast and furious fun a lunch was served, followed by the distribution of "cigars," but it will be some time before some of the members will really enjoy a smoke after the erratic tendency shown by the "cigars" which were passed around.

The guests of the evening were Plumbing Inspector Griffin, of Salem, Plumbing Inspector Herrick, of Beverly, and Past National President David Craig, whose home is in Peabody, within the confines of the North Shore Association's territory.

Plans are being made for the annual ladies' night of the association early in February.

NEW ENGLAND PLUMBING INSPECTORS TO MEET IN BOSTON.

Plumbing inspectors from all sections of New England are expected to be present at the third annual meeting of the New England Association of Plumbing Inspectors, which is to be held at the Quincy House, Boston, on next Wednesday, January 27th. The special guest of the occasion wil be Dr. Frank A. Cummings, of Providence, who will address the association on the subject: "Life, Its Inception and Development." Officers for 1915 will also be elected at this time.

The present officers of the association are: R. S. Bemis, Providence, R. I., president; J. F. Hurley, Worcester; C. O. Morton, Portland, Me.; C. O. Seaman, Manchester, N. H.; G. G. Couron, Stamford, Conn., and J. P. Carney, Newport, R. I., vice-presidents; Ernest G. Bates, Springfield, secretary, and J. H. Mulloney, Boston, treasurer.

The association was originally a Massachusetts state organization, but three years ago it was enlarged and made to cover all of the New England states. Vermont is the only New England state not represented in its present membership.

SYRACUSE MASTER PLUMBERS ELECT OFFICERS.

The Master Plumbers' Association of Syracuse, N. Y., at its annual meeting elected the folowing officers for the ensuing year: President, J. L. Curran; vice-president, C. E. McCarthy; secretary, W. V. Hipkens; treasurer, T. E. Clay; sergeant-at-arms, John Lavelle. The executive board will consist of the officers and the following members: M. F. Burke, past-president; Charles Leiger, William Drexler and William Young.

UTICA MASTER PLUMBERS' ANNUAL MEETING.

The Master Plumbers' Association of Utica, N. Y., held its annual meeting Thursday evening, January 14th, and elected the following officers for the year: President, Chares J. Barber; vice-president, Christian Klossner; treasurer, W. A. Tibbits; secretary, Charles J. Breen, 92 La Fayette Street; trustee (1 year), E. H. Bice; sergeant-at-arms, John J. Droz. After the election and installation of the officers, W. C. Bovee, Jr., of Utica, gave an interesting and instructive talk on "The Importance of Accounting in Relation to the Successful Conduct of Business." Following this light refreshments were served, and a social hour enjoyed by those in attendance.

CUMBERLAND MASTER PLUMBERS' ANNUAL BANQUET.

The Master Plumbers' Association of Cumberland, Md., held its second annual banquet in the Stafford Cafe in that city on Tuesday evening, January 12th, with an exceptionally good attendance in spite of the inclement weather. The membership of this association is composed of master plumbers in Allegheny and Garrett Counties, and every part of this territory was well represented. Mayor Koon, Commissioners Hummelshime and Shriver and City Health Officer Colton, all of Cumberland, were among the guests of honor. The addresses were of an enlightening character. Co-operation between the plumbers and the municipal authorities was the burden of the talks.

Commissioner Schriver in a most practical talk said his department was at all times ready to co-operate and it was open for advice. He detailed the progress that had been made in which the work of the plumber had been helpful. He asked the plumber to aid in the campaign for the reduction of the consumption of water per capita in Cumberland. He hoped during the year to have it drop from 7,000,000 to 5,000,000 gallons per day.

Mr. Shriver advocated the adoption of the use of the meter system by water takers generally. He pointed out the many advantages it possessed over the flat rate.

Health Officer Colton also recognized the work of the plumber in bringing about better health conditions. He said since the introduction of Evitts Creek water the city death rate had dropped to 13.45 per 1,000 and typhoid had practically been stamped out, there having been a drop of 400 in the number of cases, compared with 1913.

Mayor Koon talked briefly, expressing thanks for the courtesy of the invitation to be present. Commissioner Hummelshime gave an address of a humorous character, dwelling on the plutocratic reputation of the plumbers. He caused much laughter. He concluded by extolling the craft. Joseph I. Habig made a practical talk and, like Commissioner Shriver, offered suggestions looking to bring about more systematic and satisfactory results in the matter of the installation and care of plumbing.

W. H. Deneen of Frostburg, secretary of the association, gave a brief but strong address on the work of the plumbing profession, which has fought the battles of the practical sanitarian, and to it is due an eternal debt of gratitude

Others who spoke were City Plumbing Inspector George E. Ways and George W. Shaffer, former presidents of the association. All the talks were liberally applauded. A letter of regret over being absent from John B. Macfarlane, one of the leading lights of the organization, was read. Mr. Macfarlane has been confined to his home for several days by illness. Malcolm S. Jones, president of the association, was toastmaster. He expressed great pleasure over the success of the banquet, both as a gastronomic and an educational event. The menu was splendid in every detail, reflecting the fine cooking for which the Stafford is noted.

WISCONSIN MASTER PLUMBERS ELECT OFFICERS.

The Wisconsin State Association of Master Plumbers held its annual convention in Milwaukee, Wis., on Tuesday and Wednesday, January 19th and 20th, with a large attendance, about 250 members being present. The following officers were elected: President, H. G. Helstrom, Eau Claire; vice-president, B. J. Brewer, Waukesha; secretary, C. H. Goodman, Kenosha; treasurer, F. E. Green, Janesville. Board of directors; the officers and S. V. Hanley, Milwaukee. Delegates to the National Convention: S. V. Hanley, Milwaukee, and Al. Delforge, Green Bay. Alternates: John Stemper, Milwaukee, and A. G. Fuge, West Bend.

IOWA MASTER PLUMBERS ELECT OFFICERS.

The Iowa State Association of Master Plumbers held its annual convention at the New Hotel Kimball, Davenport, Ia., on Tuesday, Wednesday and Thursday, January 19th, 20th and 21st. General L. C. Boyle spoke Wednesday afternoon and National Director E. J. Benning brought greetings from National President S. Louis Barnes. The following officers were elected for the ensuing year: President, John Thomas, Des Moines; vice-president, James M. Wilson, Washington; secretary, S. C. Smith, Waterloo; treasurer, W. D. Hogan, Sioux City; organizing secretary, William Redieske, Des Moines. The following were elected directors for a three-year term: John Gustin, Fort Dodge; James Wilson, Washington; and J. H. Fenton, Cedar Rapids. Clinton was selected as the convention city in 1916. The convention closed Thursday night with an elaborate banquet at the New Hotel Kimball, over 200 members, ladies and guests being present.

January 27 and 28, 1915—Illinois Master Plumbers' Association, at Springfield, Ill.

March 8 and 9, 1915—Kansas Master Plumbers' Association, at Wichita, Kan.

March 8, 9 and 10, 1915—Indiana Master Plumbers' Association, at Laporte, Ind.

March 17 and 18, 1915—The National Association of Brass Manufacturers, at Detroit, Mich.

June 1, 2 and 3, 1915—Seventh annual convention of the National District Heating Association, at Chicago, Ill. Headquarters at the Hotel Sherman.

June 28 and 29, 1915—The Master Plumbers' Association of California, at San Francisco.

June 30, July 1 and 2, 1915—The National Association of Master Plumbers, at San Francisco, Cal.

Way to Be Happy.

The Magistrate (to Mrs. O'Scrap)—"Don't you think you and your husband could live together without fighting?"

Mrs. O'Scrap—"No, yer 'anner; that is, not 'appily."—London Sketch.

New Business Ventures

Danville, Va.—Farley Plumbing and Heating Co. has been incorporated with a capital stock of $4,000 to $15,000. The officers of the company are: President, F. K. Farley, and secretary-treasurer, J. M. Ley.

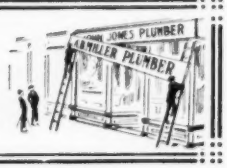
New York, N. Y.—Louis E. Gunset Plumbing and Heating Co. has been incorporated to conduct a plumbing and heating business in the Bronx. The directors are Louis E. Gunset, Frederick Smith and Ernest Schultz.

Charlottesville, Va.—The R. L. Thomas Co., of this city, has been incorporated with a capital of $5,000, to conduct a plumbing business. The officers of the company are: R. L. Thomas, president and treasurer; G. M. McNutt, secretary.

Mishawaka, Ind.—The Reesh & Carter Heating and Plumbing Co. has been incorporated with a capital of $5,000, to conduct a plumbing and heating business. The incorporators are Charles E. Reesh, Mildred Reesh and Wilford Carter, all of this city.

Mobile, Ala.—H. N. Thompson, formerly of Grand Rapids, Mich., has opened an up-to-date plumbing establishment at 705 Dauphin Street. Mr. Thompson was for eight years plumbing inspector at Grand Rapids, Mich., and he is an expert plumber. Associated with him are his two sons.

Business Changes



Wheeling, W. Va.—Robert W. Kyle has moved his plumbing business from 109 18th Street to 1518 Main Street.

Kewanee, Ill.—H. A. Dustin has moved his plumbing establishment from 112 West Second Street to 208 West Second Street.

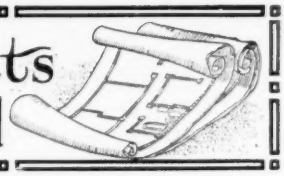
Austin, Minn.—W. C. Mullen has disposed of his plumbing and heating business to N. O. Crane, and the transfer has taken place. Mr. Crane is an experienced plumber and steamfitter.

Finlay, O.—The plumbing firm of Daymon & Mueller has been dissolved by mutual consent, Carl Mueller having purchased William Daymon's interest, and he will continue the business at the old stand.

Brookline, Mass.—Frank G. George has purchased the interest of W. R. H. Goudey in the firm of George & Goudey, and the business will hereafter be conducted at the old location, 3 Harvard Square, under the name of F. G. George & Co. I. R. Tooker will be in charge of the plumbing department.

Norwich, N. Y.—Charles G. Nash, of the firm of Nash & Robinson, has bought out his partner, John Robinson, and will run the business alone. Mr. Nash is a very popular man about town, and his many friends wish him success. He has just closed a good-sized contract, the heating of the $75,000 residence of Mr. Charles Brooks.

Contracts Awarded



Camden, N. J.—A. Heppard has secured the contract for plumbing three new residences in Woodlynne, N. J.

Defiance, O.—St. John's German Catholic church awarded the heating work for their new church to Carey & Hill in this city.

Wheeling, W. Va.—William Hare has been awarded the heating contract in the Stag Hotel being built by the Rodhers Estate in this city.

Cleveland, O.—The Burton & Johnson Co. has just been awarded the heating contract in the building being erected by the Crown Land Co.

Springfield, Mo.—The T. F. Reynolds Plumbing Co., of this city, has secured the contract for the plumbing in the Heer-Andres Building, now in process of construction on the site of the old court house. The contract amounts to $6,000.

Clarksburg, W. Va.—The Garrett Heating & Plumbing Co. has been awarded the contract for heating the new State Board of Control Building at Terra Alta, W. Va. The plumbing work in this building will be done by J. R. Walters of Wheeling, W. Va.

Berwick, Pa.—Kirkendall & Brownson have been awarded the contract for the installation of a heating system in the new Borough Building in this city. This firm is at present installing a hot-water heating plant in the Good residence at Wapwallopen.

Obituary

Edward Clarence Keeler.

Edward Clarence Keeler, who was formerly engaged in the plumbing business at Seattle, Wash., died at his home in San Diego, Cal., on Wednesday morning, January 11th. He is survived by his widow and four sons.

P. S. Hudson.

P. S. Hudson, vice-president of the Baker-Smith Co., steam-fitting contractors, died at his home in Chicago on Saturday, January 16th, in his sixty-fifth year. Mr. Hudson was born in Perrytown, N. Y., and came to Chicago forty years ago. He was a Thirty-second degree Mason and a member of several other fraternal organizations. His wife, a daughter and a son survive him.

Carl E. Strebinger.

Carl E. Strebinger, a retired master plumber of Newark, N. J., died at his home in that city on Sunday, January 3rd, in his 68th year. Mr. Strebinger was born in Gruenstadt, Germany, and came to this country when twenty-three years old. He settled in Newark and engaged in the plumbing business, which he continued until his retirement ten years ago. His widow and three sons survive him.

Among the Wholesalers and Manufacturers

CENTRAL SUPPLY ASSOCIATION'S MID-WINTER MEETING.

The Central Supply Association will hold its sixty-seventh regular meeting at the Auditorium Hotel in Chicago on Wednesday, February 24th, according to official announcement just issued by Secretary Paul Blatchford. Following its usual custom the executive committee will meet the day before.

WILL MANUFACTURE PLUMBING AND HEATING SPECIALTIES.

The D. G. Trap & Valve Co., of Belleville, N. J., has been incorporated with a capital of $25,000, to manufacture plumbing and heating specialties. The incorporators are George Livingston, A. A. Cryer and J. H. Eastwood.

WILL MANUFACTURE PLUMBERS' SPECIALTIES.

The American Brass Mfg. Co., of San Francisco, Cal., has been incorporated, with a capital of $25,000, to manufacture plumbing specialties. The incorporators are L. H. Handy, M. A. Whittle, H. C. Johnson, W. L. Phillips and A. L. Studebaker

THE ANNUAL MEETING OF THE UNITED BUNCH OF SHEEP.

The Home Fold of The United Bunch of Sheep held its annual meeting at the St. Charles Hotel, Milwaukee, Wis., on Saturday, January 16th, with a good attendance. The organization is composed of plumbing and heating salesmen and the following officers were elected for the ensuing year: Grand Ram, A. L. Klug; Vice-Ram, F. W. Baetke; Chief Shearer, R. G. Hohnbach; Keeper of the Golden Fleece, F. Wagner. After an enthusiastic speech by A. L. Klug it was decided to push and use the motto, "Milwaukee First." Action, which is the keynote of success, true friendship and good fellowship predominated.

LEIGHTON SUPPLY CO.'S SALESMEN ON EDUCATIONAL TOUR.

J. C. Wilson, assistant manager of the Leighton Supply Co., Fort Dodge, Ia., accompanied by eight of the company's salesmen, left Fort Dodge Sunday evening, January 17th, on a two weeks' educational tour, visiting factories manufacturing products sold by the Leighton company, in order to get thoroughly acquainted with the goods. The party is visiting the plants of the Mark Mfg. Co., Evanston, Ill.; Dodge Mfg. Co., Mishawaka, Ind.; Kewanee Boiler Co. and National Tube Co., Kewanee, Ill.; H. Mueller Mfg. Co., Decatur, Ill.; Peerless Selling Co., Evansville, Ind.; The Vaile-Kimes Co., Dayton, O.; the Standard Sanitary Mfg. Co.'s plant at Pittsburgh and New Brighton, Pa.; John Wood Mfg. Co., Conshohocken, Pa.; Lord & Burnham Co., Irvington, N. Y., and Elizabeth, N. J. The salesmen in the party were C. L. Harris, H. E. Dole, G. F. Shelp, J. L. Brunais, G. I. Clement, R. L. Anderson, H. E. Maxwell, and W. Jones.

NEW ARGENTINE BOND ISSUE.

The Argentine Government has placed on the market a new issue of bonds to the total value of $15,000,000 (all amounts given in this announcement are stated in terms of United States currency). The notes are dated December 15, 1914, and mature in three annual installments of $5,000,000 each, Series "A" falling due December 15, 1915, Series "B" December 15, 1916, and Series "C" December 15, 1917. They are issued in coupon form in the denomination of $1,000. Series "A" notes are offered at 100, yielding interest at 6 per cent; Series "B" notes at 99½, interest at 6¼ per cent; Series "C" notes at 99¼, interest at 6¼ per cent. The interest is payable semi-annually, on June 15 and December 15, and both principal and interest are payable in United States gold dollars at the National City Bank of New York. They are redeemable at 101 and interest on any interest date on 90 days' published notice.

These notes are issued under authority of law No. 9468 of January 16, 1914, and are the direct obligation of the Government of the Argentine Nation. They are exempt from all Argentine taxes. The text of each note will embody the following agreement: "The Government of the Argentine Nation covenants that during the life of this loan no more favorable conditions as to security will be given any other loan of the Government of the Argentine Nation without equally securing this loan both as to principal and interest." The bonds are being handled by banks in New York, Boston, Philadelphia, Pittsburgh and Chicago, from which further information can be obtained.

INSURANCE FOR THE UNEMPLOYED IN GERMANY.

United States Vice Consul General Louis F. Dreyfus, of Berlin, Germany, under date of November 12, 1914, has submitted the following interesting report on Insurance for the Unemployed in Germany:

The governments of the various States in Germany have commenced studies and investigations of the problems of unemployment. All previous efforts to pass legislation for the whole Empire have failed. Various municipalities, however, have inaugurated successful systems of insurance against unemployment. The unemployed are provided with funds enabling them to obtain the barest necessities during this period, thus shielding laborers against absolute misery in times of industrial depression. These systems have generally required the laborer to contribute toward this fund, supplementary to the municipal grants.

First Municipal Organization Plan.

The first actual establishment in Germany of a municipal system of insurance against unemployment was in

Cologne. It was modeled after the system employed in Berne, Switzerland. March 6, 1896, it was decided to provide this insurance during the winter months. Individuals who had made the regular insurance payments, 35 pfennigs (8.3 cents) for the unskilled and 45 pfennigs (10.7 cents) for the skilled workmen, during 34 weeks, were provided with work when out of employment, and in cases where this was not possible daily grants of 2 marks (47.6 cents) during the first 20 days of unemployment and 1 mark (23.8 cents) during the next 28 days were paid.

Systems Reorganized. Labor Classified.

A reorganization of the above system became necessary, and in 1911 various changes were made. The insurance of unorganized laborers and reinsurance of the organized were both provided for in the new arrangement, which was to include the whole year instead of the winter months alone. The unemployed were divided into skilled and unskilled, designated as tariff A and tariff B, respectively. Each of these two classes was subdivided into least dangerous, medium, and most dangerous, with a corresponding grading of the premium.

Limitation of Membership.

Membership was limited. In order to exclude the workmen of little physical, moral or intellectual worth proof of long service with a fixed minimum period was required. An age limit was not provided. However, an addition of 25 per cent to the regular dividend was provided on policies covering individuals over 60 years old. Because of the impossibility to control pieceworkers it was necessary to exclude this class of labor.

Residents of Cologne Eligible. Tariff Rates.

In view of the contribution from the municipal treasury, insurance was limited to workmen who had lived or worked in Cologne for some time. The right of support begins after 52 weekly payments. For the first 6 days of unemployment no daily grant is made. During the next 20 week days 1.50 marks (35.7 cents) is paid to members insured under tariff A and 2 marks (47.6 cents) to members insured under tariff B. For the following 40 days 0.75 mark (17.8 cents) is paid to members insured under tariff A and 1 mark (23.8 cents) to members insured under tariff B.

Different Premium Rates.

Weekly premiums differ according to the danger of the employment, as follows: Tariff A, class 1, 15 pfennigs (3.6 cents); class 2, 20 pfennigs (4.8 cents); and class 3, 45 pfennigs (10.7 cents). Tariff B, class 1, 20 pfennigs (4.8 cents); class 2, 30 pfennigs (7.1 cents); and class 3, 60 pfennigs (14.3 cents).

Reinsurance of Members of Unions. Leipzig Effort Failed.

Unions of employers and employees which already have a system of insurance can conclude an arrangement for reinsurance by which they can be partly compensated for support given to the undeserving unemployed. In this case the daily compensation per individual after payment of 52 weekly premiums amounts to 0.75 mark (17.8 cents); 104 weekly premiums, 1 mark (23.8 cents); 156 weekly premiums, 1.25 marks (29.7 cents), and 208 weekly remiums, 1.50 marks (35.7 cents).

These amounts are paid out about 60 times within 52 weeks. It is presumed that the assessment from the organization to which the member belongs is at least 25 pfennigs (6 cents) additional. The premium to be paid by members of unions whose occupation is grouped under class 1 is 4 pfennigs (1 cent); class 2, 10 pfennigs (2.4 cents); and class 3, 30 pfennigs (7.1 cents).

The first business year of the Cologne organization, from July 20, 1911, to June 30, 1912, gave the following results: On June 30, the number of insured was 13,347, of which 41 were directly insured; that is, they had no claim to any assistance from their unions, while the other 13,306 were reinsured. Of the 41 directly insured, 32 belonged to the group of most dangerous employments, 5 to the medium, and 4 to that of the least dangerous. The second attempt to establish a municipal system for the relief of unemployed was made at Leipzig in 1903, but the municipality refused to appropriate any money for the fund.

Ghent System Introduced. Insurance in Other Cities.

The first time the so-called Ghent system, named after the city of Ghent, Belgium, was introduced into Germany was on January 1, 1907, at Strassburg. The Ghent system is based on subsidies from public funds granted to trade-unions to supplement their own benefit schemes. This system, because of its cooperation with the already existing labor unions, is said to have the advantages of facilitating the control of the causes and terms of unemployment, as well as that of being the most economical to administer. In addition to Strassburg, the Ghent system has been introduced in Schiltigheim, Bisheim and Muhlhausen.

In 1909 municipal insurance of unemployed was undertaken in Erlangen. Schoneberg followed in 1910 and Freiburg (Baden) in 1911, Kaiserslautern and Stuttgart in 1912, while Schwaebisch-Gmuend, Esslingen and Mannheim joined in 1913.

J. Wallace Drew has joined the sales force of the Haydenville Co., of Haydenville, Mass., and New York City. Jack will cover New York state territory where he has long been identified with the plumbing supply line.

Chas. D. Symms, president of the Plumbing Supply Co., of Sioux Falls, S. D., was in Chicago this week visiting the trade. He reported business good in his part of the country and that the year just closed was the best in the history of his company.

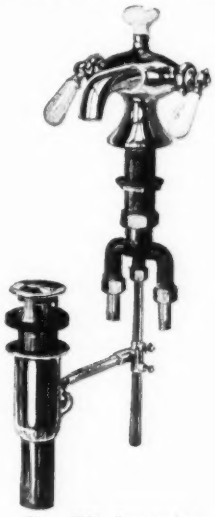
Paul Rozier has been appointed manager of the Omaha branch of the United States Radiator Corporation. He assumed his new duties on January 1st. Mr. Rozier was formerly connected with the St. Louis and the Detroit offices of the corporation.

A. C. Brown, president of the Chicago Faucet Co., of Chicago, has been appointed park commissioner for the District of Irving Park, Chicago. Mr. Brown is also president of the Central Improvement Association, one of the most active organizations of its kind in Chicago.

W. H. Price, president of the Master Plumbers' Association, of Knoxville, Tenn., was in Chicago this week calling on friends in trade. He also favored "Domestic Engineering" with a visit. He reported that Knoxville and vicinity felt the business depression only in a very small degree and that the outlook for a good year is exceedingly bright, in fact, better than it has been for the last five years.

THE IMPERATOR MIXING FAUCET WITH POP-UP WASTE.

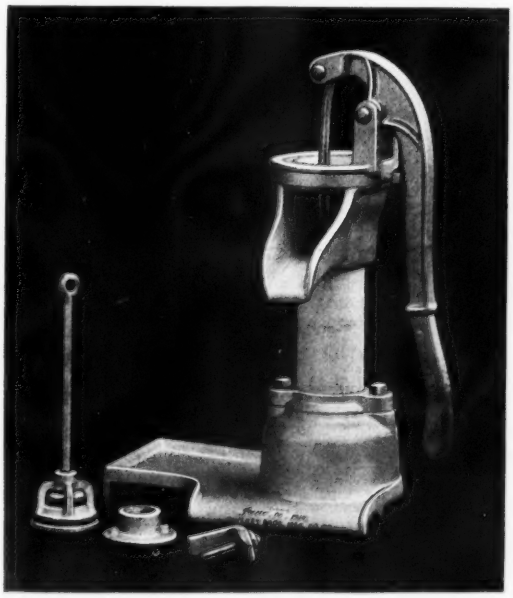
The accompanying illustration shows the No. 1222 Imperator Mixing Faucet with Pop-up Waste for lavatories, manufactured by the Chicago Faucet Co., of 313 South Clinton Street, Chicago, and which was recently placed on the market. The company is of the opinion that this is a remarkable addition to its products, especially in the matter of construction. This faucet is designed to furnish hot, cold or tempered water from one spout and it is so constructed that the lift rod operating the pop-up waste passes directly through the center of the faucet and requires no packing because the rod passes through a cast metal chamber. The fixture is neat and compact, and as there is nothing further required on the lavatory it is claimed that it is not only an attractive, but also an economical installation. Interested parties can obtain full particulars from the company upon request, mentioning "Domestic Engineering."



No. 1222 Imperator Mixing Faucet.

THE AURORA BLUE PUMP.

The accompanying illustration shows the Aurora Blue Pump mounted on the Divekey Pump Base, one of the most interesting of the line of pumps and pump bases now being marketed by the Divekey Bros. Mfg. Co., of Aurora, Ill., and which is said to be meeting with great success in the plumbing trade throughout the country. This pump is said to be manufactured of the best grade of material throughout with nickel plated brass cylinder, brass bucket and loose brass seat. Among the points of merit especially emphasized by the company are beauty of design, sanitary features and strength. It drains into the sink and it is said to fit any sink rim. Complete information pertaining to the large line of pumps and bases marketed by this company can be obtained upon application mentioning "Domestic Engineering."



The Aurora Blue Pump on Divekey Pump Base.

NEW C. & L. KEROSENE FIRE POTS AND TORCHES.

For the past twenty-five years the Clayton & Lambert Mfg. Co. of Detroit, Mich., has enjoyed the reputation of placing on the market fire pots and blow torches of a high degree of efficiency, and it has been their claim that "they have never experimented at the expense of the user." This same policy has been carried out in introducing their new Kerosene fire pot No. 221 and Kerosene torch No. 96, quart size, illustrated herewith and No. 95 torch, which is similar but smaller, being pint size. The No. 221 Kerosene fire pot is said to be practically indestructible as the tank is made of heavy gauge seamless drawn steel with bottom and fittings welded in, not soldered. The shield is of steel, made from one piece. The intense heat produced by the powerful burner is sufficient for all ordinary work and the flame is protected by a shield which makes this fire pot excellent for outdoor work under severe conditions of wind and weather or for indoor use. The Kerosene torches Nos. 96 and 95 are made of heavy brass fitted with powerful automatic brass pumps which produce ample air pressure in the tanks. The burners generate intensely hot blue flames about six inches in length producing sufficient heat to quickly melt a quarter inch copper rod, and give excellent satisfaction outdoors as well as for inside work. Smoke and odor are practically eliminated owing to the improved construction of the generator of the burner. All parts are strong and easily accessible for cleaning should they ever become clogged from impurities in the fuel and a cleaning needle is supplied free of charge. The makers of these new kerosene tools have issued circulars describing them, which will be mailed together with catalog showing their line of gasoline torches and fire pots to those who write for them and mention "Domestic Engineering."

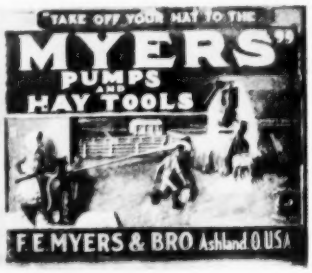
Nos. 96 and 221 "C. & L." Kerosene Firepot and Torch.

DISTRIBUTING ATTRACTIVE CALENDARS.

The Atkinson Co., of Rochester, N. Y., manufacturers of brass, bronze and aluminum castings, has recently sent its customers and friends most attractive calendars which are evoking much commendation. The calendars, which are 14x17 inches in dimensions, are convenient, inasmuch as all the months of the year are shown on one sheet and can be seen at a glance.

A NOVEL AND ATTRACTIVE CALENDAR.

F. E. Myers & Bro., of Ashland, Ohio, have just mailed the trade a novel and attractive calendar, size 17 by 48 inches, the top illustration of which is shown herewith in miniature. Other illustrations on the calendar are pumps of all descriptions to the number of probably three hundred. All in all it is a very unusual and attractive publication and those who failed to receive a copy of it will no doubt be able to secure one upon application, mentioning "Domestic Engineering."



The Metal Market

Steel and Iron.

Expectations of large orders for products in both the steel and iron industries for the last half of January are not large. A slowing down in buying was noted and no new orders of much consequence were reported. The aggregate of orders reported for steel products was 26,000 tons of rails, 782 cars, 6 locomotives and 50,000 kegs of truck supplies. It is expected that the Interborough System of New York will comply with the order of the Public Service Commission and substitute steel cars for the wooden ones now in use. This should result in an order amounting to about $10,000,000. Contracts for pig iron during the past week were meager amounting to about 40,000 tons and producing a weaker tone for both steel making and foundry grades. The result has been irregularity in prices, but the business has been too small to indicate the attitude of the furnaces. The low prices reported at Buffalo can be traced back to December since the producers have assumed a stronger attitude. Stocks of pig iron appear to be increasing, although reports are not complete. In the Pittsburgh district, including western Pennsylvania and eastern Ohio, stocks increased 23,000 tons and the surplus held in this region exclusive of the United States Steel Corporation amounted to 675,000 tons on December 31. The indications are that the surplus held by merchant and steel companies will amount to 2,000,000 tons. The market in the Eastern territory was extremely dull, the chief transaction being 4,000 tons of low silicon iron at Buffalo. From Pittsburgh the aggregate of orders was about 8,000 tons while the South reported sales of 6,000 tons. Contracts are pending for Northern shipment from 4,000 to 5,000 tons in the East and 25,000 tons in the Pittsburgh district. It is expected that the Westinghouse Electric & Mfg. Co. will order 15,000 tons of pig iron this week. Prominent dealers express themselves as believing that the present dullness is but temporary and hope that with the approach of spring the business will assume something like normal conditions as to volume and prices. Quotations are as follows:

No. 2X Northern Foundry, Tidewater, New York	$14.25 to $14.50
No. 2X Northern Foundry, Buffalo	14.50 to 15.00
No. 2 Southern Foundry, Birmingham	9.50 to 10.00
No. 2 Southern Foundry, Cincinnati	13.00 to 13.25
No. 2 Southern Ohio Coke, Cincinnati	14.25 to 14.75
No. 2 Northern Foundry, Chicago	12.75 to 13.50

Copper.

As indicated last week copper is assuming a strong position and the recent large orders from abroad, especially from Russia and Japan, have had the effect of putting the price up to 14 cents per pound. Japan has ordered 25,000,000 pounds and it is estimated that Russia will require a like amount. Buying by domestic consumers has not been large of late, but dealers are looking for an increase in the purchasing movement as a number of inquiries are being made in the trade. The largest users of Lake at present are the makers of ammunition who are understood to have large orders for war supplies. It is estimated that the bookings for copper since January 1st amount to about 75,000,000 pounds. An interesting development which occurred last week was the decision of the Copper Producers' Association to dissolve and the effect produced by the action has been an increase in competition.

Tin.

American consumers appear to be indifferent to the market resulting in a failure to advance prices. The visible supply is large under present conditions and the quantity afloat abundant for current requirements. The actual wants regulated the buying. The receipts at the Atlantic ports were 1,155 tons and the quantity afloat consigned to the United States estimated at 3,965 tons. Spot tin is quoted at 33¼ cents per pound and January deliveries at 33 cents.

Lead.

The market was easy during the past week and reports of less interest abroad together with the poor buying in the domestic market were responsible for a decline by large selling interests which resulted in similar declines, both in London and in the local metal exchanges. Prices ruled at 3.65 to 3.75 cents for New York delivery and 3.50 to 3.60 cents at East St. Louis.

Spelter.

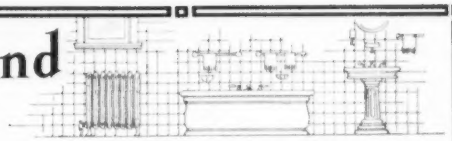
The steady reduction in the supply of spelter aided by an increased demand from abroad has produced a strong market and higher prices prevailed. Spot, New York delivery, was quoted at 6.00 to 6.10 cents, and East St. Louis, 5.85 to 6.00 cents.

Old Metals.

New York dealers' buying prices are all nominal as follows:

Strictly crucible copper	$11.25 to $11.50
Light copper	9.75 to 10.00
Uncrucibled heavy copper	11.00 to 11.50
Cocks and faucets	8.50 to 8.75
Light brass	6.75 to 7.00
Solder joints	7.00 to 7.25
Heavy lead	3.25 to 3.30
Tea lead	2.90 to 3.00

Among the Plumbing and Heating Contractors



Illinois

Chicago and Vicinity.

A high grade six-story apartment building is to be erected on Walton Place at the southwest corner of Lafayette Court, by W. B. Martin, of Chicago, which is expected to cost in the neighborhood of $150,000. No plumbing or heating contracts have been awarded to date.

The Robinson Furnace Co., 205 West Lake Street, has been awarded the heating contract for a flat building and garage to be erected at 73rd Street and Coles Avenue.

The plumbing fixtures for a modern bungalow to be built at 2407 Hartzell Street, Evanston, will be installed by the American Heating & Plumbing Corporation, 1615 Benson Avenue, Evanston.

Nelson & Wagner, 130 North Oak Street, Oak Park, will install the plumbing fixtures in a modern residence to be built on Euclid Avenue near South Boulevard, Oak Park.

The Advance Heating Co., 105 North Clark Street, has recently been awarded the contract for installing the heating system in the flats to be erected at 5402 West Monroe Street.

A. S. Cameron, of 6921 North Clark Street, will install the heating plant in a large apartment building to be erected at 5001-9 North Ashland Avenue. The plumbing fixtures will be installed by G. F. Winkler, of 841 North State Street.

Edmund J. Benning, of Chicago, one of the directors of the National Association of Master Plumbers, was a speaker at the Elks' Club, Milwaukee, when the Wisconsin Association of Master Plumbers convened on Tuesday, January 19th. Wednesday, January 20th, he addressed the members of the Iowa Master Plumbers' Association in convention assembled at Davenport, Ia.

N. H. Johnson, of 5039 Lincoln Avenue, will install the plumbing fixtures in a number of flats to be built at 1725-7 Winona Avenue.

The Erickson Plumbing Co., of 5961 South Halsted Street, has secured plumbing contracts on a six-flat building to be constructed at 6027-29 Eberhart Avenue, and on two two-flat buildings to be constructed at 1411 and 1413 East 71st Place.

Indiana

M. H. Troyer, formerly of Chicago, has purchased a half interest in the plumbing and heating business of C. B. Rhodes, at Logansport, Ind. The new partnership will be known as Rhodes & Troyer, with headquarters at 41 Market Street. In addition to the plumbing and heating business, power plant work and ice machine work has been added.

Michigan

Detroit and Vicinity.

The Detroit Association of Master Steam and Hot Water Fitters held its annual banquet at the Edelweiss Cafe on Monday evening, January 11th, at which were present for the first time the ladies. The committee in charge promised a "delightful get-together social" and surely kept its word. As a whole, it was the nicest affair ever given by the association. In fact, so successful was it that plans were immediately made for holding similar dinners at least every three months. The attendance at the dinner was about 50, consisting of members, ladies and a few invited guests. It started at 7:30 with an elaborate menu. The members were seated at one long table, which was profusely decorated with flowers, the flowers afterwards being distributed among the ladies. The service was excellent. Music was furnished by a special orchestra, and between courses and the various addresses the members were entertained by several high-class cabaret performers, provided by the cafe management. The favors to the ladies consisted of pretty pink and yellow baskets, filled with candy.

It was close to 9 o'clock when the speechmaking started. The toastmaster was James W. Partlan, president of the association, and he performed his duties in a most capable manner, at no time allowing the program to lag. By his dry humor and clever witticisms he had the crowd good-natured all the time, and the whole room seemed to effervesce with smiling countenances when he was talking. The principal addresses of the evening were made by Ward N. Choate, a Detroit attorney, who spoke on "Industrial Conditions and Future Prospects," and Ralph Collamore, the well-known heating engineer, who spoke on "The Problems of the Master Fitter." Then followed a few remarks by every member present, and in this way ideas were exchanged, and all phases of the business touched upon. Many good ideas and suggestions were brought out for the betterment of the industry, and many laugh-provoking stories were told. When all the speechmaking was finished, a strictly informal session was held for three-quarters of an hour, the members and ladies forming little groups and talking things over among themselves. It was really a most delightful and enjoyable affair for everybody.

Ohio

Dayton.

A special meeting of the Master Plumbers' Association, of Dayton, held in connection with the installation of the association's newly-elected officers, was marked by the presence of James A. Wood, of Toledo, president of the Ohio Association of Master Plumbers. Mr. Wood addressed the gathering, his attention being largely devoted to the new plumbing code, parts of which are now before the Legislature for enactment. He also took up matters of general interest to organization members. Another distinguished

visitor present was State Plumbing Inspector Groeninger and his assistant, William Duffy, Mr. Groeninger making a short talk. A number of out-of-town plumbers were in attendance, including several from Springfield and one from Hamilton, the total number of members and guests present being nearly sixty. A lunch was served. An agreeable feature of the evening was the presentation to Secretary Edward Stautzenback of a handsome watch and chain, in testimony of the appreciation felt by the association of his services. The officers installed were: President, H. P. McGrew; vice-president, William Haas; secretary, Edward Stautzenback; treasurer, Frank Clemens; directors, Harry Danner and David Pickrel.

Cincinnati and Vicinity.

The first big building job let this year in Cincinnati has been awarded, the Roche-Bruner Building Co. being the successful contractor, and a ten-story office building at Sixth and Sycamore Streets, being the work in question. The cost of the building will be in the neighborhood of $250,000, and the plumbing and heating, of course, will be a considerable item. These parts of the general contract will be sublet by the general contractors later on.

Henry Niemes has been awarded the plumbing contract on a good-sized brick residence to be built under the supervision of Architect E. H. Dornette for Charles F. Herke.

The Cincinnati Master Plumbers' Association has filed a protest with the city council against the passage of an ordinance providing for the employment of a plumber at the new City Hospital. The reason given for the protest is that under the new building code no one except a regularly licensed plumber with a bona fide place of business is permitted to do any plumbing work. Furthermore it is urged that contracts for work at the City Hospital provide that the plumbing installed in the building must be guaranteed for one year.

Considerable interest centers in the coming annual meeting of the National Association of Builders' Exchanges, which will be held in Columbus, January 26 to 28, inclusive. The annual meeting of the Ohio State Association of Builders' Exchanges will be held in Columbus, January 25. The headquarters for both conventions will be at the Virginia Hotel. Governor-Elect Willis, who will be inducted into office at that time, will deliver the address of welcome on behalf of the state, and Mayor Karb will welcome the delegates on behalf of the city. One of the important matters to be considered at the state convention is that of a new state building code. A special commission named by the last session of the Ohio legislature has prepared a new code which will be discussed at the meeting.

Pennsylvania

Philadelphia and Vicinity.

Hoben & Doyle, of Twenty-first and Pine Streets, have been awarded the contract for installing the heating system in the new Municipal Hospital. Wm. McCoach, Jr., secured the contract for plumbing this building.

Edward P. Robertson, of 3456 Amber Street, has the contract to install seventeen new bathrooms in a row of houses in Kensington.

A. F. Yahn, 3451 Emerald Street, has a contract for large alterations in Frankford, Pa.

Brown & Doran, North Front Street, have dissolved partnership, Mr. Doran continuing business at the present address. Mr. Brown has opened up a shop at Hope and Lehigh Avenue.

S. Faith & Co. have been awarded the contract to install heating in the new school being erected at the corner of James and Pratt Streets, as well as the school at the corner of Ninth and Miffin Streets. Bulman Bros., 2835 North Fifth Street, has been awarded the plumbing contract for these schools and J. J. Nesbitt, of Atlantic City, has the ventilating contract.

C. Rieben, of Twenty-fifth and Dauphin Streets, has quite a number of plumbing fixtures to install throughout the northwestern part of the city.

Pittsburgh and Vicinity.

George B. Stewart of Pittsburgh will do the heating work in the new church being erected by the Gustavus Adolphus Evangelical church in this city.

The City of Pittsburgh has awarded the heating contract for the new dairy barn being erected at Marshalsea, Allegheny County, to the Burns & Fleming Co. of Pittsburgh.

W. N. Sauer of Pittsburgh will do the plumbing work in the new store building being constructed by A. W. Mellon.

A Busy Plumbing and Heating Establishment.

The plumbing and heating establishment of H. L. Nash & Co., of 1907 Sanderson Avenue, Scranton, Pa., is one of the live and up-to-the-minute establishments in that

H. L. Nash & Co's. Plumbing and Heating Establishment in Scranton, Pa.

city. The accompanying picture shows a front view of their place, with a group of their employes. Mr. Nash has been located for a number of years in Scranton and has a reputation for efficiency and thoroughness in all the work that he undertakes.

Massachusetts

Boston and Vicinity.

Mid-winter weather has resulted in a slight slackening up in the building operations in Boston and vicinity this month with its resultant effect upon the plumbing and heating trades but to offset this falling off in new work there has been the usual amount of emergency repair work particularly in the residential sections of the greater city. The householder, who closed up his home for the Christmas holidays and "took a chance" rather than go to the slight expense of having a plumber empty his boilers and traps, is "paying the fiddler" now and incidentally helping the plumber to meet his bills during the dull season for contracts. The plumbers are still optimistic about

the future and all are predicting an early and busy spring season.

Mayor Curley of Boston has approved a contract with the J. P. Dwyer Co. for making alterations to the heating plant in an apartment house owned by the city at the corner of Harrison and Massachusetts Avenues, the contract price being $2,552. The only other bidder was J. J. Hurley & Co., whose figure was $2,886.

J. Preston Perham, who has served the Master Plumbers' Association of Boston and Vicinity as financial secretary so ably the past year, has been re-elected for another term. He was the unanimous choice of the members of the association. Inadvertently Mr. Perham's name was not mentioned in the report of the annual meeting of the Boston association recently, although it was well known even before the meeting that his re-election was an assured fact.

Following their plan of having periodical "educational meetings" the members of the Master Plumbers' Association, of Lynn, Mass., turned out in large numbers on the evening of January 8 to listen to a talk on "Profits and Losses." The speaker of the evening was Frank Nelson. He illustrated his talk by use of the blackboard on which he drew a number of diagrams in his effort to bring home his statement that every business man, be he a plumber, heating engineer or expressman, should be honest with himself and more honest with his customer, and make a profit. Mr. Nelson's talk proved so interesting that the association invited him to speak to them again at a public meeting. After the close of the meeting light refreshments were served and then amid the smoke of good cigars the members discussed the points brought out by the speaker.

Members of the Master Plumbers' Association of Fall River, Mass., have called on the water board of that city to prosecute alleged violators of the city ordinance which forbids any except licensed plumbers to do work on city water pipe connections. The Master Plumbers' Association claims that a great deal of such work is being done by men who are not competent and who have neither taken out licenses, submitted to an examination nor given bond as the law demands. The water board has asked the master plumbers to assist them in running down such cases with the idea of prosecutions.

California

San Francisco and Vicinity.

The San Francisco plumbing trade is not very active just now, and supply men report that there is very little doing at present anywhere along the Coast in a strictly plumbing way. Large engineering propositions, however, seem to be on the increase after a very quiet year. Cast iron pipe is quiet; but, as municipal bonds are selling better, some important waterworks business is expected in the spring.

Tom F. Leary, Pacific Coast representative of the H. Mueller Manufacturing Co., has returned from his trip to the factory, where he attended a very interesting meeting of the sales managers of the house. The factory is preparing for a very busy year, and Mr. Leary reports a more hopeful feeling everywhere.

Newton Stern has succeeded Mr. Euphrat as general manager of the Pacific Porcelain Ware Co., of San Francisco and Richmond, Cal., and the former will now act as general manager of the Pacific Sanitary Manufacturing Co. also, the latter company having joint offices with the former in this city and a factory in Richmond. The two companies have also opened joint offices in Los Angeles, Cal., and Portland, Ore. The two plants are now employing nearly four hundred men at the Richmond works. A working demonstration of the water closets and bowls of the Pacific Porcelain Ware Co. is now shown at the San Francisco salesrooms.

Bids have been called for on the steam heating system, boiler house and domestic hot water distribution for the race track grand stand at the Panama-Pacific Exposition.

South Pasadena.

The city council, after nearly a year of delay, finally authorized bids on eight miles of sewer, to connect with Pasadena's outfall line at Garfield Avenue in Alhambra.

South Pasadena's famous thirty miles of "bottled-up" sewer was laid before negotiations had been definitely completed with Pasadena for a joint use of their outfall and sewer farm, and unforeseen delays have postponed the final ratifications of the inter-city sewer agreement until this week.

In the meantime South Pasadena's thirty miles of sewer has been without an outlet, literally "corked" at both ends, but the city council's action this week makes its ultimate use for sewage disposal but a matter of months.

Pasadena.

Creller & Seaman, 120 West Colorado Street, have finished the plumbing in the reconstructed Maryland Hotel. It was a very busy and hustling proposition to get it all finished in time for the tourist season, but these capable partners with a large force of plumbers put it through on time. They have just secured the contract for the plumbing in J. B. Johnson's residence and garage, amounting to $1,800.

Gockley & March have the contract for the plumbing in the Altadena grammar school, and are also busy with plenty of jobbing.

Foss & Jones are busy with several heating contracts, among which is the contract for the heating of the Altadena grammar school.

E. Thirey is a busy man nowadays perfecting his valveless closet, on which he has spent several years of hard work.

O. L. Waage has the contract for the plumbing in the Madison Avenue bungalow court and several smaller jobs which are keeping him busy.

C. M. Hull is doing the plumbing in four stores on Colorado Street.

Other Cities in the State.

L. B. Stewart and E. G. Mills, of Visalia, have organized the Stewart & Mills Plumbing Co.

C. C. McCullough has secured a location in Calipatria, and is now equipping a plumbing establishment.

The municipality, of Escondido, is asking for bids for 800 ft. of 12-inch fourteen-gauge galvanized iron well casing, one-half of it perforated; 2,000 ft. of 4-inch, 6-inch and 8-inch standard suction pipe with tees, flanged union and reducers, for the work of sinking wells, installing casing, etc.

W. T. Casey, of Redwood City, has secured the plumbing work for the Harriet Pullman residence at Hillsboro. Consideration, $2,800.

Bids are being received by the trustees of the Mountain View School District, located at El Monte, for the remodeling and repairing of toilets, the lining of cesspools and the plumbing work connected with the remodeling and changes.

Bids have been asked on plumbing to be installed at Sycamore Grove Park for the City of Los Angeles.

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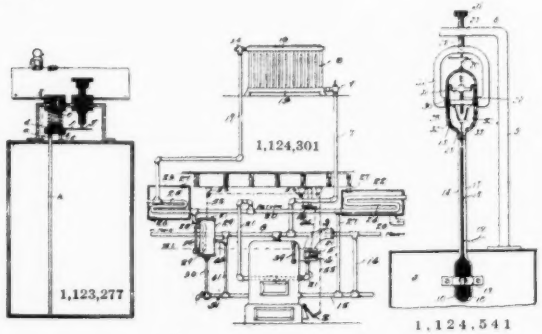
San Francisco, Cal.	913 Nevada Bank Bldg.
Seattle, Wash.	Arcade Bldg.

Heating Department.

1,123,277. Thermostatic Regulating Device. Ernst Haagn, Hanau-on-the-Main, Germany, assignor to the firm of W. C. Heraeus, G. M. B. H., Hanau-on-the-Main, Germany, a corporation of Germany. In a thermostatic regulator, the combination of two bodies having different coefficients of expansion and each provided with an upwardly extending projection, a circuit closer supported on the upper ends of said projections and projecting laterally therefrom, and a spring holding the circuit closer in position on said projections and permitting it to rock about its connection with one of said members as a fulcrum.

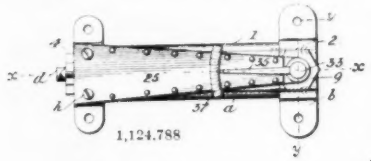
1,124,301. Steam Heating Apparatus. Thomas J. Cullen, Jersey City, N. J. The combination with a boiler, its furnace, and smoke flue, of a steam radiator, a steam pipe communicating with the boiler and radiator, a return pipe from the radiator extending through the boiler furnace, where it is heated to cause circulation of air therein, and into the smoke flue, and means for controlling the passage of gases from the radiator to the return pipe comprising a screw plug forming a valve and having longitudinal tapered slots therein to control the passage therethrough of gases from the radiator.

1,124,541. Thermostat. Harold D. Singer and Howard V. D. Pratt, Hospital, Ill. In a thermostat device, the combination of a thermometer-tube containing an expansible fluid, a member in said tube provided with spring-arms bearing against the inner wall of the tube, a member of magnetizable material in said tube and having a screw-threaded connection with said first named member and movable up and down relative thereto, and electric circuit terminals one of which is in contact with said fluid and the other of which is supported by said member of magnetizable material relative to the upper end of the fluid.



1,124,788. Heat Regulating Apparatus. Nathan E. Nash, Toronto, Ontario, Canada. In a heat regulating apparatus, a shell comprising a cylinder, a valve chamber having a discharge opening of limited size leading to the atmosphere and a port whereby it is in communication with one end of the cylinder, a valve in the chamber which controls the admission of compressed air to the chamber, and thence the said port, a piston in the cylinder having an extension of a reduced diameter the end of which is open to the air thereby producing a piston having differential

effective end areas, and passages whereby the annular reduced area of the piston is constantly exposed to compressed air, the construction described having the result that when the valve in the valve chamber is opened, the piston will be forced forward, and when closed the piston will move in a rearward direction.



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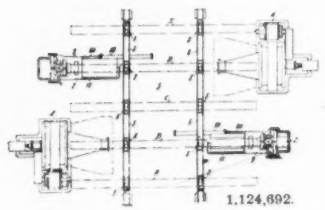

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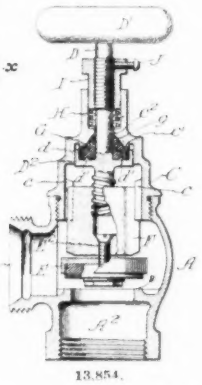

13,854.

1,124,692. Pipe-Threading Machine. John J. Boax, McKeesport, Pa., assignor to the National Tube Co., Pittsburgh, Pa., a corporation of New Jersey. In a pipe threading machine, a pipe turning mechanism comprising a rotating barrel having projecting arms forming an open sided throat, said throat extending lengthwise parallel with the axis of rotation of said barrel, a support for the barrel, means for rotating the barrel and arms, relatively movable pipe gripping jaws adjustably mounted on the outer ends of said arms and arranged to grasp and turn the pipe during the pipe threading operations, means for relatively adjusting said jaws and means for opening and closing said jaws.

13,854. Valve. Frederick Leadbeater, Detroit, Mich. In a valve, a body portion provided with a valve seat, a valve head, a stem for actuating the valve head, a flange integral with the stem, a disk carried by said flange having a cone-shaped upper wall tapering toward the stem, a bonnet secured to the body portion through which the stem projects having an annular seat to receive the disk and with a projecting flange adapted to bear against the cone-shaped upper wall of the disk to force it toward the stem, a spring housed within the bonnet and sleeved upon the stem to force the flange to its seat, and an adjustable nut engaging the stem to regulate the tension of the spring.

Plumbing Department.

1,122,848. Mixing Valve. Edgar J. Bloom, Tiffin, Ohio. A mixing valve having in combination a casing, hot and cold water passage-ways leading thereinto, and a double valve comprising a seat-plug and a portion of a cylinder, the seat-plug being adapted to lift off from its seat to admit of the discharge of the water and the portion of the cylinder adapted to regulate the mixture by its rotative movement, substantially as described.

1,123,189. Combined Faucet and Shampoo Fixture. John Hannaford, Portland, Ore. In a basin fixture, two vertical tubular valve chambers each having an intermediate lateral outlet, a valve located in each of said chambers, seated against the inner end of the respective outlets and movable horizontally to and from its seat, means for moving said valve; a second valve element controlling the discharge from the upper end of each of said tubular valve chambers; and a spout located between and connecting with the outlets of said second valve elements in the upper end of said tubular valve chambers, the discharge from said

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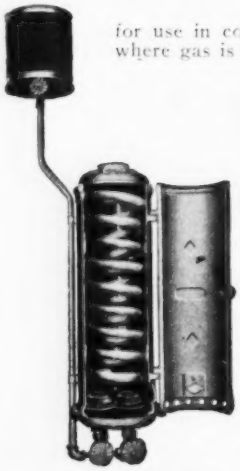

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W. W. Station Toledo, Ohio

SIMPLICITY

Nothing in Tank But Air and Water

ECONOMY

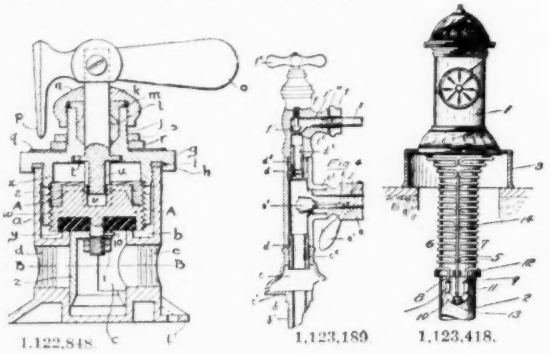
DURABILITY

A man has one opportunity in a lifetime, so don't let it get away by overlooking the exclusive agency for the AMERICAN LINE. No competition. DIRECT TO PLUMBERS.

AMERICAN VALVE & TANK CO.
Indianapolis, Ind., U. S. A.

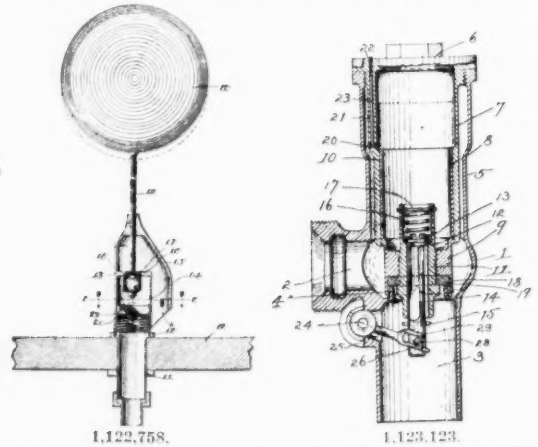
intermediate spout being controlled by each of said second mentioned valve elements.

1,123,418. Fire Hydrant. Charles C. Steiner, Philadelphia, Pa. As a new article of manufacture, a steam jacket comprising a closely coiled tortuous arrangement of piping having a steam inlet and outlet connection, said piping being sectional in construction and provided intermediate of said inlet and outlet connections with means forming hinged relation between said sections.



1,122,848 1,123,189 1,123,418.

1,122,758. Ball Cock. Bret R. Hull, Manhattan, Kans. A float valve comprising a casing formed of one piece having an inlet compartment and an outlet compartment, a float, a stem connected to said float, a valve carried by the lower end of said stem, a valve seat positioned intermediate the ends of said valve casing, a removable wall threaded in the lower end of said valve casing, said removable wall provided with a diagonally extending discharge aperture for directing liquid passing through said casing to one side of said valve, said discharge aperture being positioned to one side of the longitudinal axis of said valve, whereby said liquid will have less tendency to close said valve against said valve seat, said diagonally extending aperture adapted to direct the liquid against the side wall of said casing for retarding the velocity of said liquid.

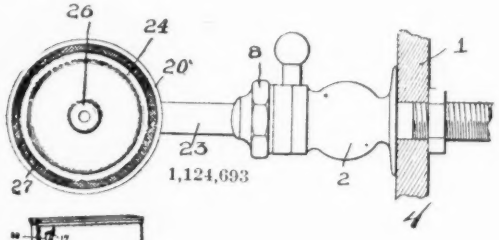


1,122,758. 1,123,123.

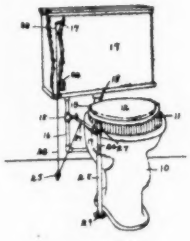
1,123,123. Flush Valve. Peter Grabler, Cleveland, Ohio, assignor, by direct and mesne assignments to The Cleveland Flushometer Company, Cleveland, Ohio. In a flush valve, a casing having an inlet opening and an outlet opening, a valve seat within said casing and between such openings, a main valve co-operating with said seat, a cylindrical member carried by said casing and having an internal bearing portion and another portion of larger diameter beyond the bearing portion, a plunger carried by said main valve and having a bearing portion equal in extent to that of

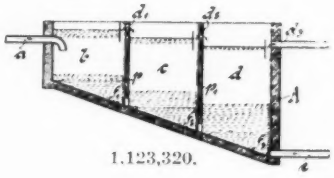
the bearing portion of said cylindrical member, said bearing portions being coextensive and registering throughout their entire length when the valve is closed, a relief valve for relieving the pressure above the plunger, and means for operating said relief valve.

1,124,693. Drinking Fount. Albert C. Brown, Chicago, Ill. A drinking fount, comprising a waste cup, a fount cup detachably positioned within said waste cup and projecting at its upper edge slightly above the upper edge of said waste cup, and a screen supported in said waste cup immediately below its upper edge and centrally apertured to receive said fount cup, said screen when positioned being sprung inwardly by said fount cup to concave the same.



1,124,693


1,123,550.


1,123,320.

1,123,550. Water Closet Controlling Device. Martin J. Kelly, New Britain, Conn. In combination, a water closet bowl having a hinged seat, a tank having a tripping lever, a supply pipe connected to the said tank, a cock controlling the supply pipe, and a spring operated controlling lever having the body portion connected to the said tripping lever, and having one end connected to the said seat, the said cock being operatively connected to the other end of the said controlling lever and serving as a fulcrum support therefor, and the said supply pipe being in a vertical position adjacent the said bowl, and serving as a support for the said cock and for the said other end of the lever connected thereto.

1,123,320. Putrefaction Chamber. Max Kusch, Friedenau, near Berlin, Germany. The combination of a plurality of putrefaction chambers each having an outlet opening into a common discharge chamber or space formed by the chambers, each chamber comprising a plurality of normally closed compartments adapted to open one into another, the cross-sectional area and the average depth of each compartment in any one chamber being respectively greater and less than the same dimensions of the compartment next thereto in the same chamber nearer the discharge chamber.

1,123,477. Flushing Valve. Robert A. Brooks, Chicago, Ill., assignor to Brooks Manufacturing Co., Chicago, Ill., a corporation of Arizona. A flushometer, embodying a casing, a seat therein, a differential valve normally seating to close said seat, a vent valve acting to admit inlet pressure on said differential valve to operate the same with said inlet pressure, controlling means embracing a closed fluid containing cup and a piston therein one of which is connected to said vent valve, a passageway being provided from one side of said piston to the other, and separate

You are always safe in specifying the

Hartley Bracket Pump

because it has stood the test of years and has won a reputation for Quality, Service and Durability.

No platforms nor baseboards.

Makes ideal sanitary installation, as there is no breeding place for vermin.

You can handle the HARTLEY at a good profit and be assured of perfect satisfaction.

Write for particulars and prices.

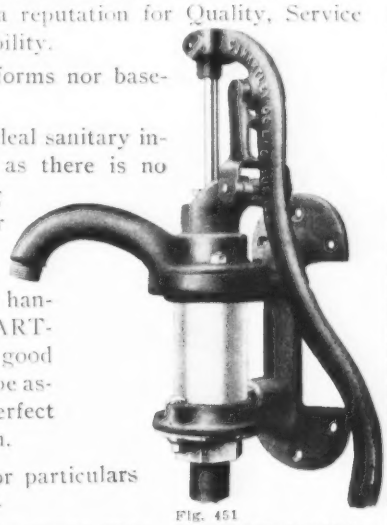
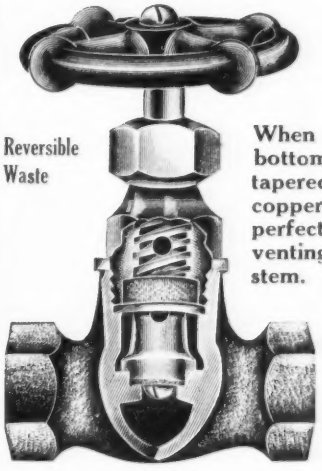


Fig. 451

C. J. HARTLEY COMPANY
Eaton and Water Streets, PEORIA, ILL.

The Sterling Compression Stop and Waste

A Valve, Not a Sprinkler


Patented

No Springs

Reversible Waste

When fully opened bottom of stem being tapered registers against copper washer, making perfect metal seat, preventing leakage around stem.

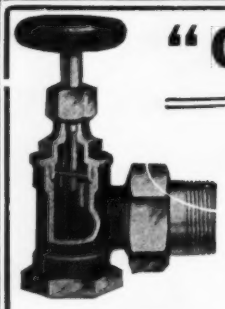
Sold Only Thru The Jobbing Trade

Does not have to be fully opened in order to close waste outlet.

Does not waste while being opened or closed.

Send us a trial order to be filled thru your jobber

The Sterling Specialty Company
NEWCOMERSTOWN, OHIO



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HIGH GRADE

Radiator Valves

All Valves thoroughly tested and inspected before shipment.

Quick-Opening Union Radiator Valve

Capitol Brass Works
DETROIT, MICH.

Ready for Instant Use

The time lost on each job in fitting up an old-fashioned vise bench will more than pay for a

Portable Vise Bench

Besides, this bench can be folded and carried to the job by any boy—saving express charges—and can be set in position and fastened to floor in a few minutes.

Built to last forever.

Order one and you will never use any other kind.

Standard Iron Works
540-50 W. 58th Street
New York City

"IT'S ALL IN THE SEAL"

The Original Trane Mercury Seal System of Vacuum Heating

(Patented)

is the simplest and most effective system ever devised.

Gives a range of temperature from 100 to 250 degrees.

Easily applied to any steam or vapor heating system—new or old.

Write for particulars.

VACUUM HEATING CO.
1315 Cherry Street Philadelphia, Pa.

Recommend and Install

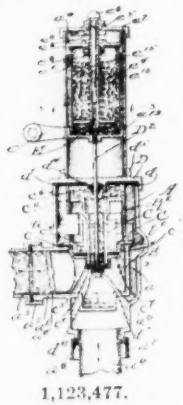
Logan Radiation

THE BEST
Costs No More Than Any Other
All Standard Sizes, Steam and Water
Ask Your Jobber for Prices or Write Us Direct.

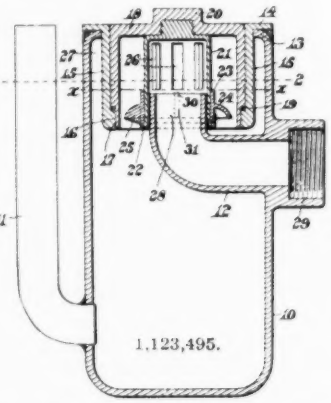
Logansport Radiator Equipment Co.
Logansport, Ind.

automatically operating means exterior to said passageway for choking the flow of fluid through said passageway under increased speed of said piston.

1,123,495. Trap. Thomas E. Crosby, Allston, Mass. In an anti-siphon grease trap, a body portion, an inlet-pipe, an outlet-pipe, a cup having a downwardly extending portion extending into the body portion and provided with a plurality of elongated openings whereby the downwardly extending portion serves as a strainer, and an automatic water shield for retarding the flow of water and preventing siphonage, automatically adjusting itself to the pressure of any water in the trap and which reduces and enlarges automatically the openings in the downwardly extending portion of the cup thereby varying with the pressure the volume of water permitted to pass into the outlet pipe.

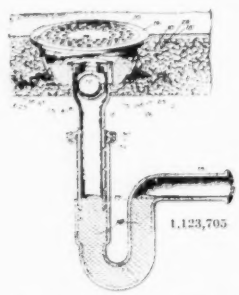


1,123,477.

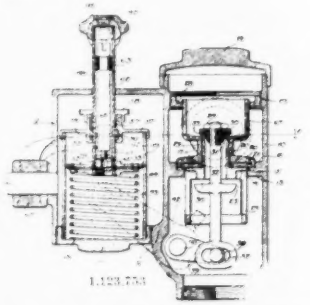


1,123,495.

1,123,705. Floor Drain. George J. Dehn, Chicago, Ill. A floor drain comprising a receiver basin, a discharge pipe connected to said basin, anchoring means on the outside of the basin adapted to be embedded in a concrete floor to secure the basin in the floor packing between the anchoring means and the outside of the basin and means on the anchoring means for pressing the packing inwardly against the outside of the basin.



1,123,705.

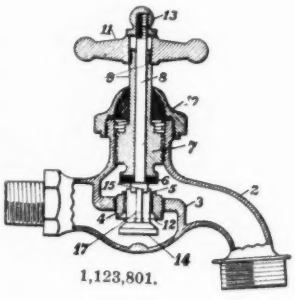


1,123,753.

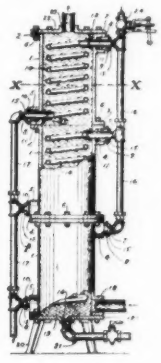
1,123,753. Flushing Valve. Edward L. Kellan, Chicago, Ill. A flushing valve comprising a casing having a valve seat, a main, counterbalanced valve on the inlet side of said seat having a passage extending therethrough, a relief valve normally closing said passage, a stem for said relief valve extending through said passage and provided with a shoulder for opening said main valve, a closed liquid containing cylinder at one side of said casing, a piston in said cylinder having means restricting the passage of liquid therethrough in one direction, one of said piston and cylinder elements being fixed and the other manually shiftable, a restoring spring for said shiftable element, a shaft extending through said valve casing on the discharge side of said valve seat, a crank arm on said shaft engaging

said relief valve stem, an arm on said shaft, said arm being external with respect to said casing and said cylinder and a link connecting the same to said manually shiftable element, substantially as described.

1,123,801. Valve. Orpheus P. Robinson, Pittsburgh, Pa. A cut off comprising a casing having a dividing wall therein provided with a horizontal portion, there being an opening through said horizontal portion, valve seats on opposite sides of the wall surrounding the opening, a check valve for engaging the lower valve seat, a faucet valve mounted in the casing above the dividing wall, a washer on the lower end of said valve for engaging the upper seat, a washer securing member connected to said faucet valve, said faucet valve being arranged to be moved upwardly a sufficient distance to permit the check valve to engage its seat to close the passage through the dividing wall, there being registering interlocking means on the washer securing member and the check valve adapted to engage each other when the faucet valve has been moved downwardly a predetermined distance, to rotate the check valve and move it downwardly away from its seat, substantially as described.



1,123,801.



1,123,765.

1,123,765. Water Heater. James J. Lawler, Pelham, N. Y. A water heater composed of a series of shell units, each unit provided with an opening upon opposite sides adjacent the upper and lower end thereof for the reception of a nipple, an independent helical coil pipe for each of said units connected at its ends with the nipples, the coil convolutions of each section being arranged in vertical alinement with the coils of the other sections, a main steam supply pipe having branch connections with the nipples arranged at the upper ends of the units and adapted to feed steam of uniform temperature to said coils, and a main outlet pipe having branch connections with the opposite nipples.

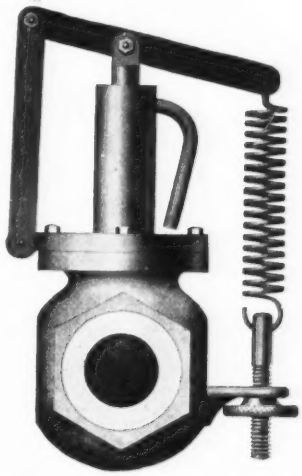
1,124,648. Pipe Hanger. Ira F. Penniman, Needham, Mass. A pipe hanger consisting of a pair of wire lengths twisted about one another to provide a straight shank, one of the wires extended from the shank and formed into a number of circular coils extended at right angles to the shank and increasing in circumference away from the shank to provide a frusto conical body, the other of the wires being extended from the shank through the coils and beyond the outermost coil and pointed and threaded at its ends, and the lower ends of the wire lengths being diverged to provide pipe engaging arms and means to partially surround a pipe to be secured to said arms to support a pipe upon a hanger.

1,124,049. Plumbing Fixture. Ira A. Mann, Pittsburgh, Pa. The combination in a wall bowl plumbing fixture, a vertical outlet pipe, a rigid supporting coupling projecting laterally therefrom, a bearing plate secured to the front

Eclipse

Specially Made
REGULATING VALVE
For Marine Service

Same construction as our No. 110 Reducing Valve. Fitted with a special spring instead of weight to prevent any jumping of lever, which throws steam pressure on the reduced side.



Works perfectly with pressure up to 200 lbs. — reducing anywhere from 5 to 60 lbs.

Tested and GUARANTEE D

Write for Catalog "D."

HUGHSON
Steam Specialty Company
5019-23 S. State St., Chicago.

Sani-Flush

should not be confused with ordinary scrubbing powder.

It is the ONLY preparation made exclusively for cleaning and keeping closet bowls sanitary and odorless.

Cleans every part thoroughly where a brush cannot reach.

Positively will not injure pipes or bowl.

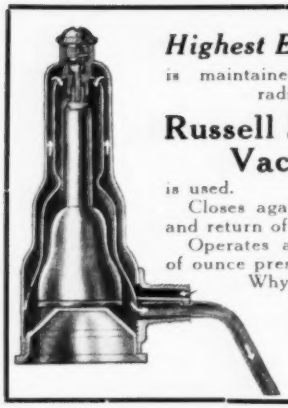
Requires no scrubbing or scouring. Does the work quickly and does it right.

It will pay you to recommend and sell SANI-FLUSH to your trade. You will find it a source of easy profits.

Every can sold means orders for many more.

Write today for free trial can and our special proposition to plumbers.

The Hygienic Products Co.
Dept. D, 220 Eighth St., S. E.
CANTON, OHIO



Highest Efficiency

is maintained in every section of radiator where the

Russell Syphon Air and Vacuum Valve

is used.

Closes against loss of steam, water and return of air.

Operates automatically on fraction of ounce pressure.

Why not investigate?

W. A. Russell & Company
63 W. 37th Street
New York City

The Pump You Want

Here is a

Modern House Pump

that requires very little space, and makes a neat, satisfactory installation.

Tapped for 1-inch pipe.

Brass Valve Seat

Adjustable to any position.
Write for details and prices.

PETERS PUMP CO.
Kewanee, Illinois
Established 1890

Service and Valve Boxes Meter Boxes
Testing Plugs Wireless Pipe Locaters
Flush Tank Regulators

M O D E R N
IRON WORKS QUINCY, ILL.

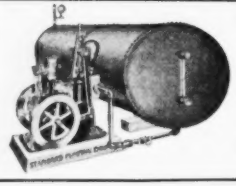
"IN UNION THERE IS STRENGTH"

For a closet seat with great strength and extra long life, recommend and install the

UNION GUARANTEED SEAT

It bears the Union Gold and Blue Label—look for it.

M. P. BERGLAS MFG. CO., Fulton and Furman Streets., BROOKLYN, N. Y.



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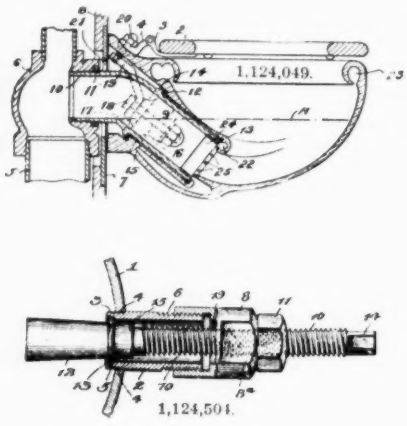
and
PUMPING UNITS

Hand Power, Automatic Electric Power, Gas and Gasoline Power. Get our Catalogues and Prices before you buy.

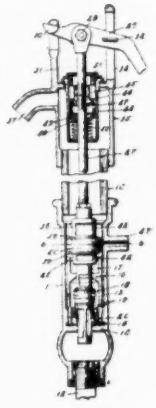
STANDARD PUMP & ENGINE CO.
518 Prospect Ave., N. W. Cleveland, O.

¶If you want a salesman, foreman or workman, advertise in the Classified Department of "*Domestic Engineering.*" Used by the best houses in the trade.

of the wall, a bowl supported upon the coupling and having a bearing face opposing the said bearing plate, the said bowl being free to move vertically over the bearing plate as the vertical pipe expands and contracts and moves the bowl up and down.



1,124,504.



1,124,455.

1,124,504. Nipple and Assembly for Attaching Nipples. Philip Mueller, Decatur, Ill., assignor to H. Mueller Mfg. Co., Decatur, Ill., a corporation of Illinois. An apparatus for expanding a fitting having at one end a ring-seat, said apparatus comprising a sleeve adapted to be threaded on said fitting, a ring-expanding tool, the expanding end of which is a wedge, a ring adapted to be seated in the ring seat of said fitting, and a threaded stem passing freely through the fitting and sleeve, and a tool manipulator threaded on said stem.

1,124,455. Inlet and Waste Valve. William Wallace Kemp and William Henry Van Horn, Baltimore, Md. A device as specified having a casing, and a cage detachably mounted in the casing, said cage having a valve seat in its upper end, a detachable bottom in its lower end, a valve stem passing through said valve seat and said bottom, a valve on said stem, a spring in said cage between said bottom and said valve adapted to normally seat the valve and means for depressing said stem to open said valve.

An "Ad" for Father.

Teaching the young idea how to shoot is most necessary in this day and generation, but to teach him to be an excellent marksman is impossible unless the youth himself desires to shoot straight and hit the bull's eye—all of which preludes thus:

At the East High School there is a class in technical knowledge of the kind most needed in everyday life, where the pupils are given talks on everyday affairs, domestic problems, "first aid" of various kinds, and the idea is to have examinations as to the knowledge from the talks.

The other day instruction was given, or suggestions made, in regard to water pipes, drainage pipes, danger in freezing and other things the amateur "fixer" should know in time of stress. One question was asked, "What would you do in a case where the pipes were frozen?" which was answered by one energetic youth (son of an east side plumber):

"Call Blank's plumbing shop—Citizen's telephone, blank, blank, blank." Which illustrates the ease with which some "young ideas" are taught to shoot.—Columbus Dispatch.

LARGER BUYING OF COPPER METAL.

Home and Export Demand Is Taking Care of the Refinery Output.

Commenting on the copper metal situation, the National Conduit and Cable Co. says: "The substantial buying power of the last few weeks has greatly helped the statistical position of copper and the problem of accumulated supplies is of less concern than it was. The large orders secured recently will undoubtedly absorb much of the metal remaining in primary hands, and as stocks are worked off the situation will inspire a greater degree of confidence in trade circles. On the basis of present production domestic consumption and foreign exports are probably more than sufficient to take care of the present total refinery output. Home demand was recently estimated at fully 40,000,000 pounds a month against 25,000,000 pounds a few months ago. Foreign demand should require as much or more than domestic requirements. On the basis of current production it is reasonable to expect a steady outlet for from 80,000,000 to 90,000,000 pounds monthly, but a sudden increase in the quantity of marketable copper would undoubtedly prove a disturbing market factor. The effect of any pronounced increase in refinery yield would certainly check buying and chill confidence. But there is nothing definite at the moment to indicate that the market will be put to such a severe test at once. There is danger, however, that an advance of 2c a pound in the selling price of copper may tempt certain interests to add to their profits by a premature increase of operations. A return to normal conditions will be best promoted by keeping production down to a 50 per cent basis until deeper inroads are made into the heavy accumulation originated by the recent restriction in consumption."

TO EXAMINE TEACHERS IN PLUMBING IN NEW YORK.

The Board of Education of New York City announces that examinations of eligible applicants for licenses to teach in evening schools, the subjects of plumbing, sheet metal work, the care and use of boilers and boiler-making, will shortly take place.

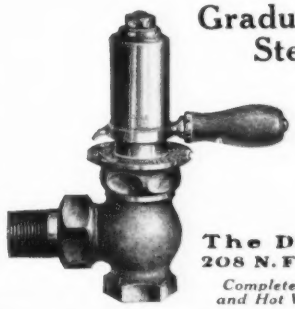
Applicants must file an application, made out on the regular form to be had from the board on request, which application must be filed at the office of the Board of Examiners not later than February 15th. Such candidates will be notified when to appear for the examination.

With the application candidates are required to file evidence sufficient to establish eligibility. Eligibility may be shown by four years' successful experience as a wage-earner in the vocation. All applicants will be required to undergo oral and practical tests, and in some subjects written examinations also.

Hogan-Sunkel Heating Co., 1513 Olive Street, St. Louis, Mo., who have been conducting a prosperous heating business, have recently added a plumbing department and would like to receive catalogs from jobbers and manufacturers of plumbing goods.

The bid of the Vancouver Plumbing & Heating Co., of Vancouver, B. C., of $98,612 for the furnishing of pipe and fittings and the construction of a reservoir for the municipal water works is the lowest so far received. A firm in Portland, Ore., submitted a bid amounting to $115,779.

Dole



Graduated Packless Steam Valve

is the steamfitter's standby. Reliable in every feature.

Easy to change to any capacity without dissembling parts.

Operates with one-half turn. Our valve literature will interest you—write for it.

The Dole Valve Co.
208 N. Fifth Ave., Chicago

Complete line of Standard Steam and Hot Water Radiator Valves

Crawford Combination

Having lead jaws, is the only vise made that will hold brass and nickel plated pipe securely without scratching or marring.

Lead jaws can easily be removed and remoulded.

Also equipped with steel jaws which will grip firmly any pipe up to 1¼ in. iron size.

Light, compact, easily carried. Can be readily secured to bench, board or door frame.

Every plumber and fitter should have this great labor-saver. No other vise or attachments needed on the job.

Write today for prices.

Joseph H. Young Co.
82 High Street
Boston, Mass.

THE REAL ARTICLE

You Will Always Use the

"CHICAGO" Condensation Pump and Tilting Tank Receiver

After you know its worth.
Simple, Positive, Economical.
Cuts coal bills in two.
Does away with old - fashioned floats and other troublesome parts.

Write for Descriptive Catalog

CHICAGO PUMP COMPANY 903 W. Lake Street CHICAGO

No Grease-Clogged Pipes where the

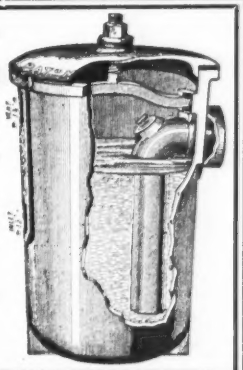
Boston Grease Trap

is used.

Catches all grease from kitchen sinks and prevents it from going into waste pipes.

Easily installed—easily cleaned—simply constructed and reasonable in price.

Write for full details.



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Classified Advertisements

Advertisements under this heading 4 cents per word per issue, address included. Send cash with order. To insure insertion copy should be received not later than Wednesday afternoon.

Situations Open.

WANTED—THREE SALESMEN TO sell staple brass goods to plumbing trade, men who are experienced in this line. Drawing account and commission. Address Standard Manufacturing Co., Pittsburg, Pa. 1-23

WANTED—MANUFACTURER OF CAST iron enamelware wants commission agents to sell plumbers throughout the United States. 1186, care "Domestic Engineering," Chicago. 1-9

WANTED—SALESMAN OF GOOD HABits and appearance, acquainted with the plumbing trade in either southern Minnesota or northern South Dakota. State experience in first letter. Address 2069, care "Domestic Engineering", Chicago. 1-16; 23

WANTED—FIRST-CLASS SHEET METal worker competent to lay out and erect any and all kinds of sheet metal work, such as Fan Blast Ducts, Blower Pipe Work, General Tin and Furnace Work. Good wages, steady employment for right man. Married man preferred. Address: Arthur W. Murray Co., Hoopeston, Ill. 1-23

WANTED—SUPERINTENDENT FOR plant manufacturing Plumbers' cast iron Enameled Ware, who is, or has been, successful superintendent or assistant superintendent in some plant in same line. No enamel recipe required. Write giving particulars. Terms: salary, and maybe partly co-operative. Address 2113, care "Domestic Engineering," Chicago. 1-23; 30

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WANTED — COMPETENT PLUMBER strictly temperate, capable of estimating, planning and installing plumbing, steam and hot water heating systems, desires situation. Small town, hardware store preferred. Reasonable if permanent. Address 2114, care "Domestic Engineering," Chicago. 1-23

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FOR SALE—ONE-HALF INTEREST IN well established plumbing and heating business, in a prosperous Iowa location. 2008, care "Domestic Engineering", Chicago. 1-16; 23

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Miscellaneous.

PARTNER WANTED—GOOD MECHANic in established plumbing shop. Small capital but good references. Address L. A. Fowler, Coscob, Conn. 1-23

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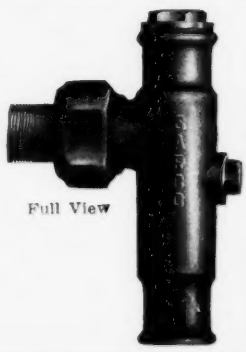

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